



**Shell Canada Limited**

application for the approval of

# **MUSKEG RIVER MINE PROJECT**

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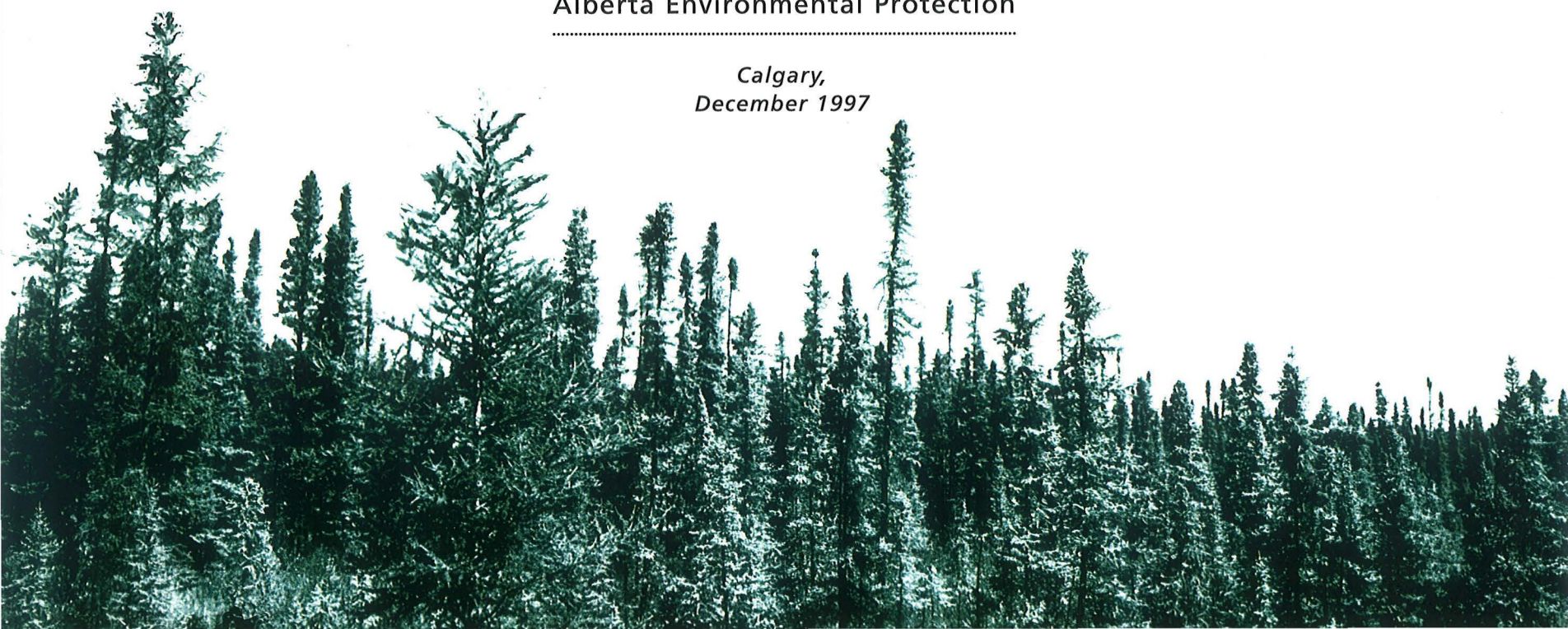
**Volume 5 • Environmental Impact Assessment  
Socio-Economic Impact Assessment**

*submitted to*  
Alberta Energy and Utilities Board  
*and to*  
Alberta Environmental Protection

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*Calgary,  
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# 1 INTRODUCTION

This report examines the socio-economic impacts of the proposed Muskeg River Mine Project, located about 70 km north of the urban service area of Fort McMurray in the Regional Municipality of Wood Buffalo. This project by Shell Canada Limited (Shell) includes an oil sands mining and extraction facility on Lease 13, producing 150,000 barrels of bitumen product per calendar day for shipment to markets outside the region.

The construction of the project will take place between 1998 and mid-2002. Production will commence in the year 2002 and reach full capacity in 2003.

This socio-economic impact assessment (SEIA) is part of the Environmental Impact Assessment (EIA) of the proposed project and has the following objectives:

- to describe the social and economic impacts of the project's construction and operation on the region, as well as to discuss ways in which the project will mitigate against negative impacts and enhance positive ones; and
- to assess the economic benefits of the project on the provincial and national economy.

The SEIA report reviews separately the impacts on the urban area of Fort McMurray, including the rural residential area of Sapræ Creek, and those on the outlying communities, including Fort McKay, Fort Chipewyan, Anzac, Janvier, Conklin, and Gregoire Lake. Additional information on the outlying communities is being prepared by community-based groups in Fort McKay and Fort Chipewyan and will be available in early 1998.

## 2 PROJECT DESCRIPTION

Shell's involvement in the oil sands region in northeastern Alberta dates back to the 1940s. Shell obtained Lease 13 in 1956 and, over the years, has explored and proposed to developed projects on the lease, including an in situ project in 1962 and a mining project in 1974. Lease 13 was also part of the resource base of the Alsands project in 1978. These projects, which did not proceed for various reasons, are evidence of the continued interest by Shell in oil sands development in the region.

The Muskeg River Mine Project builds on the experience of these previous efforts to develop Lease 13, as well as on the technological developments made by the oil sands industry in general. The project, briefly, will consist of:

- a truck-and-shovel mining operation;
- an extraction plant; and
- utilities and other support services, such as roads, shops, and office buildings.

A more detailed description of the project is provided in Volume I Section 6 of the application.

The Muskeg River Mine is a new grassroots project, which would increase the number of commercial oil sand developers to three.



### 3 METHODOLOGY

The assessment of the socio-economic impacts of the Muskeg River Mine Project rests upon developing and comparing the socio-economic conditions in the region "with" and "without" the project. The difference between these two scenarios is the impact of the project.

The "without", or base case, scenario is defined as the socio-economic situation as it would exist assuming the following oil sand activity:

- ongoing operation of the Syncrude Mildred Lake plant (including the Debottleneck I upgrader project) and the Suncor plant (including the Upgrader Expansion project); and
- development of the Suncor Steepbank and Syncrude Aurora North Mine (Trains 1 and 2) projects.

These projects are included in the base case because they have regulatory approval. The Aurora Mine project that is included in the base case is limited to the first two trains of the mine, although the Alberta Energy and Utilities Board (EUB) approval also includes Trains 3 and 4 (the Aurora South Mine). The timing of Trains 3 and 4 relates to the development of additional upgrader capacity, which is part of the Regional Development Scenario, discussed below. The base case also includes the ongoing activities of smaller operations.

The "with", or Shell Development Scenario, includes the base case projects and the Muskeg River Mine Project.

In addition, this report assesses the potential socio-economic impacts of the Regional Development Scenario. The Regional Development Scenario incorporates a range of projects, including Mobil's Kearl Oil Sands Mine, Suncor's millennium project, Gulf's Surmont project, Syncrude's Aurora Mine, Trains 3 and 4 and Upgrader Expansion, and some smaller in situ projects by Petro Canada and Japan Canada Oil Sands. Most of these projects have been announced, but none has received regulatory approval. The exception is the Aurora Mine project, which has been approved by the EUB.

The base case does not coincide with current socio-economic conditions. Over the past 18 months, the urban service area of Fort McMurray has experienced an estimated 14% population increase and has seen about 350 new housing starts. This is more than would be expected under the base case. The Steepbank Mine will add 100 new jobs between 2007 and 2010, but the Aurora Mine Trains 1 and 2, will not add to the total oil sand industry employment.

The reason for this anticipatory growth is an optimism regarding the future of oil sand development in the region well beyond that associated with the base case projects. Because people anticipate oil sand developments beyond the Steepbank and Aurora Mine (Trains 1 and 2) projects, the current socio-economic conditions are different from the base case.

In the rest of the report, the following scenarios will be described and discussed:

- the base case, which assumes development of the Steepbank Mine, the Aurora Mine (Trains 1 and 2) (Section 4). This section also discusses the socio-economic conditions in the study area in 1997, which are already showing some impacts from anticipated future developments;
- the Shell Development Scenario, which assumes that the base case as well as the Muskeg River Mine will proceed (Section 5); and
- the Regional Development Scenario, which includes all currently announced projects and some others (Section 6).

These scenarios generally mirror those used in the balance of the EIA. One exception is that the bio-physical assessment of the Muskeg River Mine also analyzes a scenario that includes the current oil sand plants, excluding the Steepbank and Aurora mines but including the Muskeg River Mine. This recognizes that the bio-physical impacts of the new mines are yet to be felt. From a socio-economic perspective, however, this scenario is not appropriate, because part of the impacts of the Aurora Mine (Trains 1 and 2) and Steepbank Mine projects, as well as other developments, are being felt already.



## 4 ENVIRONMENTAL SETTING

This section of the SEIA outlines socio-economic conditions in the study area in 1997. It also discusses the population forecast under the base case assumptions and highlights the major issues that have surfaced during the consultations and interviews with respondents throughout the region. The identified issues have guided the impact assessment of the Shell Development Scenario and the Regional Development Scenario discussed in subsequent sections.

### 4.1 Study Area

The study area used for the socio-economic baseline and impact analysis of the Muskeg River Mine is defined by the boundaries of the Regional Municipality of Wood Buffalo and is shown in Figure 4-1. It includes the urban service area of Fort McMurray, the administrative and population centre of the region, as well as smaller outlying communities, including Fort Chipewyan, Fort McKay, Sapræ Creek, Conklin, Janvier, Anzac, and Gregoire Lake.

The study area is consistent with that of several other recent SEIAs, including those for the Steepbank mine and Aurora Mine projects. It reflects social and economic factors, such as human settlement, trading, traffic, and communication patterns.

### 4.2 Regional Setting

#### 4.2.1 Information Sources

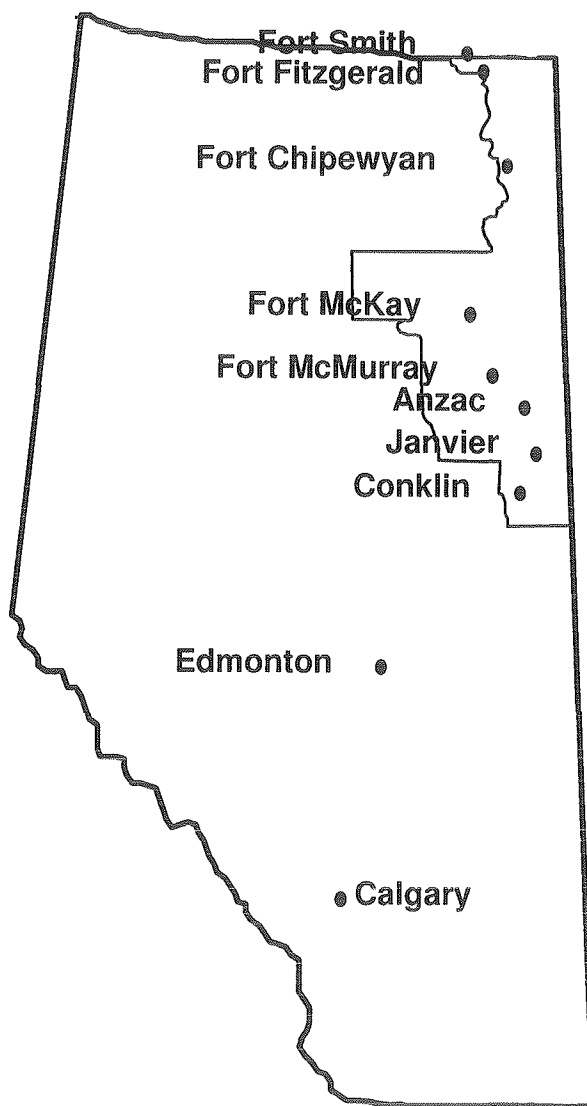
The Regional Infrastructure Working Group<sup>1</sup>, a collaboration of the oil sands industry developers and the Regional Municipality of Wood Buffalo, commissioned a socio-economic baseline study of the urban service area. This study, conducted by Nichols Applied Management, relied on

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<sup>1</sup> The Regional Infrastructure Working Group includes:

- Gulf Canada Resources;
- Imperial Oil Resources Limited;
- Japan Canada Oil Sands
- Mobil Oil Canada;
- Petro-Canada Oil and Gas;
- The Regional Municipality of Wood Buffalo;
- Shell Canada Limited;
- Suncor Energy Inc. Oil Sands; and
- Syncrude Canada Limited.

**Figure 4-1      Socio-Economic Study Area**



interviews with key respondents and a review of published sources, including the 1996 Statistics Canada census, and was completed in the fall of 1997. This work is being augmented by baseline work done by community-based groups in Fort McKay and Fort Chipewyan, covering the other outlying communities of Anzac, Janvier, Conklin, and Gregoire Lake.

Socio-economic baseline information is also contained in baseline studies prepared jointly for Suncor and Syncrude for the Steepbank and Aurora Mine projects. These studies include work conducted by the community of Fort Chipewyan and Fort McKay.

#### 4.2.2 Historical Overview

Before the development of the Great Canadian Oil Sands plant, now Suncor, the area was oriented largely to traditional activities, such as hunting, fishing, trapping and related fur trading. In the early 1940s, Fort McMurray became a rail and river transportation link and construction staging point to the north, but the region remained sparsely settled. There was no all-weather road access between the region and the more southerly parts of the province.

The development of the Suncor oil sands plant in the mid-1960s and, later, the construction of the Syncrude facility during the 1970s accelerated the population growth in the region. This growth has been further supported by subsequent expansion of those commercial oil sands facilities, combined with new experimental oil sands operations and increased natural gas exploration, forestry development, tourism, and support industries.

Much of the employment and population growth in the region has accrued to what is now known as the urban service area of Fort McMurray, including the rural residential subdivision of Sapræ Creek. The smaller, predominantly native communities of Fort McKay, Fort Chipewyan, Anzac, Janvier, Conklin, and Gregoire Lake have received little of the in-migration into the region.

The oil sands industry in the region has developed essentially in an incremental fashion as Suncor and Syncrude expanded their production through debottlenecking and other improvements to processes and facilities. Industry employment has not increased in proportion with production and in the 1986-1996 period, oil sands industry employment actually fell marginally through the productivity improvement measures.

Suncor's Steepbank Mine and the Upgrader Expansion project and Syncrude's Aurora North Mine and Debottleneck I projects are largely the same type of incremental expansion as described above. The mine projects provide mostly replacement bitumen for currently mined areas that are reaching the end of their economic life and the upgrader projects provide incremental output increases without employment growth. The Muskeg River Mine, by contrast, is a new project, which would expand the number of developers active in the area and provide new, long-term operational employment.

### 4.3 Base Case Conditions

Socio-economic conditions in the region are changing. After a period of relative stability, the region is now experiencing an era of optimism about

future oil sands industry development. This optimism is fueled by the following:

- the evolution of mining and extraction technologies that have the potential for further reductions in capital and operating costs;
- the development in 1996 of a new provincial royalty and a federal mining tax regime;
- ongoing commitment by the existing oil sands developers to the area, as evidenced by Suncor's Steepbank Mine and Upgrader Expansion and Syncrude Aurora Mine and Debottleneck I projects; and
- the disclosures by existing and new oil sands developers of significant projects, including the Muskeg River Mine (March 1997) the Mobil Kearl Oil Sands Mine Project (April 1997); the Suncor Millennium Project (July 1997), Gulf Surmont Project (October 1997), and the Syncrude 21 Upgrader Expansion (November 1997).

For the purposes of the socio-economic impact assessment, the base case economic conditions have been defined to include ongoing forestry, mineral exploration, tourism, and other activities. With respect to the oil sands industry, the economic mainstay of the region, the base case conditions include the existing plants and the Steepbank and Aurora Mine (Trains 1 and 2) projects, which have received regulatory approval. As previously mentioned, the current socio-economic conditions, especially in the urban service area of Fort McMurray, demonstrate an anticipation of additional project development.

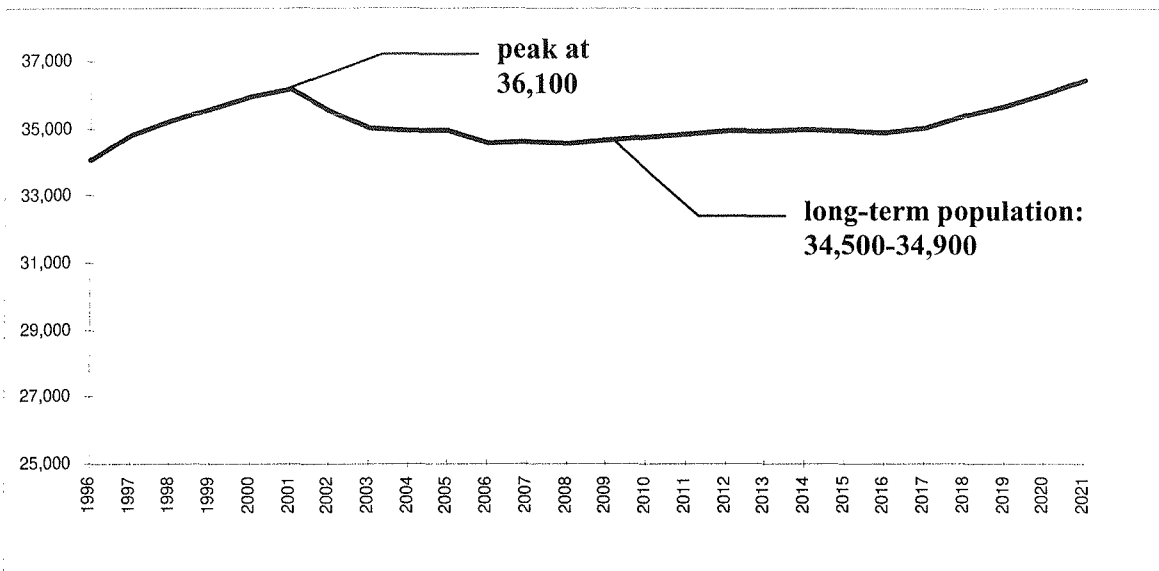
#### **4.3.1 Urban Service Area**

Following is a narrative summary of the key findings of the socio-economic baseline study. Table 4-1 presents summary baseline information. The full baseline report is submitted as an appendix to this SEIA.

##### ***Population***

The May 1996, Statistics Canada census estimated the population of the urban service area of Fort McMurray at 33,078. Discussions with local area respondents and with Statistics Canada indicated that there were a number of temporary residents in the area at that time. Including these persons and the estimated number of residents of Saprae Creek, which is essentially a subdivision of Fort McMurray, the population estimate of the urban service area in 1996 is 34,000.

Under the base case assumptions, the long-term population would have increased only marginally from the 1996 census estimate. Figure 4-2 shows the population forecast for the base case scenario.

**Figure 4-2 Base Case Population Forecast, Urban Service Area**

Note: Base case includes existing oil sands plant, plus Steepbank Mine and Aurora North Mine  
 1997 actual is estimated at 38,700 and includes impacts of anticipated projects.

The base case population forecast indicates that after an initial small construction-related population increase, the long-term population of the urban service area of Fort McMurray stabilizes at around 34,500 to 34,900. The population is expected to increase marginally in the years beyond 2014, without a corresponding increase in oil sands industry employment. This relates to the number of persons, now in the 35-45 age group, who are expected to retire in the next 15 to 20 years. Discussions with agencies representing and catering to this group estimate that over 30 to 40% of retirees may choose to stay in the area, creating a seniors' population, although there is virtually none today.

The population estimate for 1997 is higher than the number included in the base case population forecast. People are expecting more oil sands development and this is reflected in the in-migration to the urban service area. The 1997 population can be estimated using the adjusted 1996 population estimate provided above. The estimation procedure takes into account the following:

- the number of persons required to fill 585 unoccupied dwellings counted at the moment of the census in May 1996, recognizing that the residential vacancy rate in November 1997 is 0.5%;
- an adjustment to the average number of persons per dwelling to account for the anecdotal evidence that people are renting out rooms or are "doubling up";

- the inclusion of longer-term work crews, based on the demand for longer-term accommodation crews experienced by the hospitality industry; and
- the 19% average increase in visits to the hospital emergency ward in early 1997, as compared to a year earlier. This estimate is likely more than the actual population increase because lifestyle changes and the lack of physicians increase the emergency visits of long-term residents.

Taken together, the evidence suggests that the population count in the urban service area of Fort McMurray in mid-1997 is approximately 38,700 or a 13% increase over the previous year. Population is defined here as the permanent residents but includes temporary residents who stay in the region for periods of a month or more. This definition is relevant for the assessment of impacts on service agencies, including the health and emergency services, which are affected by those persons who stay in Fort McMurray, while maintaining a residence elsewhere. The estimate of the 1997 population is used in the balance of the SEIA as a benchmark for impacts.

### ***Human Services***

The urban service area of Fort McMurray offers the full range of human services, including:

- social services, including both governmental and non-governmental service providers;
- education, including institutions providing primary, secondary and post-secondary education;
- health care, including a full-service hospital and a wide range of in-and out-patient services, home care, and public health services and
- emergency services, including police, ambulance and fire services.

Most of the human service agencies have indicated an increase in the demand for their services over the past year, reflecting the increase in population discussed above. In general terms, social service agencies are currently capable of handling the demand, but many have expressed concerns regarding budgets and human resources. Many respondents contacted during the baseline study discussed the need for more partnerships between agencies to make the resources go further.

Availability of “affordable” housing is a concern. Without defining “affordable”, the current real estate market is characterized by increasing prices for housing, including rental accommodation. This has repercussions for those people living on limited budgets.

### ***Physical Infrastructure***

The physical infrastructure of the urban service area is generally adequate. The water and sewer, but not the solid waste system, have sufficient capacity for the current and anticipated near-term population. The infrastructure is also adequate for the estimated 1997 population, which is larger than the base case population due to the anticipation of additional resource development.

The urban service area of Fort McMurray is connected to the Athabasca-Lac la Biche area by Highways 63 and 881. Air connections with the rest of the province are maintained by two major airlines and with the rest of the region by a regional airline and several charter companies. Freight train service to Lynton Landing, just south of the urban service area of Fort McMurray was recently restored after a disruption of about four years.

As mentioned above, the real estate market in the urban service area is very active with house prices increasing and listing times decreasing. An estimated 350 new houses were constructed in 1997, representing an increase over the 106 new housing starts in 1996 and 22 in 1995.

### ***Summary of Issues***

Residents have identified a number of issues of special concern when responding to questions during baseline information gathering and through the public consultation for the Muskeg River Mine Project. These are listed below:

- the shortage of housing, particularly affordable housing, due to high demand for accommodation (rent or own):
  - causes additional service demands on social service agencies as more resources are devoted to housing;
  - makes recruiting of persons harder, especially for jobs in the service and non-governmental social service sector;
  - effects tourism as fixed roof and campground accommodation is occupied by individuals other than tourists.
- the rising cost of living, especially with respect to housing. One consequence of the high cost of living is the difficulty of attracting professionals in the governmental and social service professions to the region;
- project announcements induce individuals, including persons with low skills and limited resources, to come to the region in search of employment opportunities that may not materialize in the future;
- population growth means additional demands on many service providers without near-term offsetting budget increases available to the affected agencies;



- most of the increased project and consumer spending is focused in Fort McMurray, increasing the disparity between the rural and urban service area of the municipality;
- some physical infrastructure may require additional investment, including improvements to the highway system to reduce the likelihood and impact of accidents on Highway 63, or to reduce the reliance on a single highway to connect the region to the rest of the province; and
- emergency response needs may require an enhanced system over the mutual aid agreements currently in place between the municipality and the oil sands operators.

These concerns, identified by local area residents and service agencies, guide the impact assessment provided in Section 5.

Table 4-1 provides summary baseline information from local area service agencies. The indication of resources reflects the information provided by the agencies contacted.

**Table 4-1 Summary of Baseline Information, Urban Service Area of Fort McMurray.**

Organization	Program/Service or Description	Resources
<b>Human Services</b>		
<b>Municipality of Wood Buffalo - Community Services: Family and Community Support Services</b>	Personal and family counselling services to residents of the Municipality. Employee & Family Assistance Program (EFAP) to municipal workers and their families, external EFAP services on contract locally and out of the province. Provision of assistance for seniors and seniors' care givers, including Meals on Wheels, Seniors' Outreach Program. Resource and referral services for physicians, other EFAP programs and community agencies. Critical incident stress intervention services; and public education.	One team leader/counsellor, one part-time senior family counsellor, three family counsellors (one full-time and two part-time) and one program assistant. Some programs and services have a significant volunteer input. FCSS is a division of the Community Services Department of the Regional Municipality of Wood Buffalo; the other two divisions are Parks and Recreation and Community Development.

Source: Appendix A

**Table 4-1 Summary of Baseline Information, Urban Service Area of Fort McMurray (continued)**

Organization	Program/Service or Description	Resources
<b>Alberta Family and Social Services</b>	<p>Child welfare, including the investigation and handling of child abuse and neglect cases.</p> <p>Foster care, permanent wards and adoption services.</p> <p>Administration and caseload management of Social Assistance program.</p> <p>Coordination of services for persons with disabilities.</p> <p>Administration of family maintenance agreements.</p> <p>Administration and management of the Jobs Corps program.</p>	N/A
<b>Fort McMurray Food Bank Association</b>	<p>Short-term food relief through food hampers.</p> <p>In cooperation with other community organizations, delivers a new educational program called GAPS (Grocery Awareness Program Services) focusing on choice, personal responsibility, and maximizing the nutritional value of food choices.</p>	<p>Core staff of 4-5 in addition to a pool of about 75 to 80 volunteers.</p> <p>Its annual budget is approximately \$200,000, funded in part by the United Way; extensive reliance on individual donations.</p>
<b>Fort McMurray Family Crisis Centre</b>	<p>Services to women and children in crisis, including:</p> <p>Unity House shelter program (temporary housing, food, and clothing for up to 21 days ).</p> <p>Sexual assault program; "Adults molested as children" group program.</p> <p>Public education.</p> <p>SHARE group for social interaction, friendship, and mutual support.</p> <p>Other non-residential services (Men's program, Family Violence Group; and Follow-up program.</p>	<p>15 staff + about 120 volunteers</p> <p>Shelter with 21 beds (15 of which are funded, the balance are added to meet demand).</p> <p>Funded in part by the United Way.</p>

Source: Appendix A

**Table 4-1 Summary of Baseline Information, Urban Service Area of Fort McMurray (continued)**

Organization	Program/Service or Description	Resources
<b>Fort McMurray Salvation Army</b>	Shelter for the homeless. Thrift store. START program for mentally handicapped individuals, which focuses on parent education and support, workshops, community access training, independent living support, job training support, respite care, funding information, and behaviour management. The Salvation Army works closely with other service agencies in the community.	Staff of 36. Thrift store facility. New emergency shelter has overnight shelter capacity for 32 persons.
<b>Alberta Alcohol and Drug Abuse Commission</b>	Drug, alcohol, and problem gaming counselling to adolescent and adults. Detox centre, funded by AADAC (90%) and the United Way (10%). Public education and awareness program.	Approximate budget for Regional Office: \$170,000.
<b>Municipality of Wood Buffalo -- Community Services Department: Parks and Recreation and Community Development</b>	Parks and Recreation operates, maintains, and provides programming for a number of municipally-owned facilities, including the pool, playgrounds, tennis courts, and park areas. Community Development works with private-sector contractors and community groups to provide a range of services, including running the three arenas.	Parks and Recreation: about 25 full-time equivalent positions (FTE). Community Development: 6 full-time equivalent positions
<b>Golden Years Society</b>	Range of services, including transportation, to seniors residing in the Municipality of Wood Buffalo	One executive director; society relies extensively on about 60-70 volunteers. Society has a 15-passenger seat van. The Municipality operates two handi-buses, 65 and over travel free.

Source: Appendix A

**Table 4-1 Summary of Baseline Information, Urban Service Area of Fort McMurray (continued)**

Organization	Program/Service or Description	Resources
<b>The Fort McMurray Housing Coalition:</b> an inter-agency group that focuses on housing issues. Participants in the coalition include: The Fort McMurray Housing Authority, Alberta Municipal Affairs, Municipality of Wood Buffalo and others.	The Fort McMurray Housing Authority manages housing units and administers a rent supplement program to assist households in need to obtain suitable and affordable housing. The Metis/Urban Housing provides affordable housing for Metis and First Nations persons in Fort McMurray. Unity House and the Salvation Army provide emergency shelter on a short term basis.	The Fort McMurray Housing Authority has a volunteer board and 4.5 paid staff members The Landlord and Tenant Advisory Board has one paid staff member. The Fort McMurray Housing Strategies Task Force -- a volunteer ad hoc group -- prepared a housing strategies report for the Regional Municipality of Wood Buffalo in early 1997.
<b>Fort McMurray School District; Fort McMurray Roman Catholic Separate School District</b>	Elementary and secondary education. Both systems provide French Immersion and French as a second language programming. The Public School Board cooperates with the Francophone Coordinating Committee to provide a french school. The Catholic school system includes a charter school. There is one small Christian private school.	Fort McMurray School District: 11 schools; 225 professional and 150 support staff Fort McMurray Roman Catholic Separate School District: 8 schools ; 189 administrative and instructional staff and 75 support staff.
<b>Keyano College</b>	Academic upgrading. Career certificate and diploma programs. Trades and technology programs. University studies, including some degree programs. Range of non-credit programs of both an employment and personal development nature. Customized training for employers.	325 full- and part-time employees Total budget (1996/97): \$22,500,000 Operates three campuses: Clearwater and Mackenzie in Fort McMurray and one in Fort Chipewyan. Athabasca University and other universities (U. of A., U. of C.) provide distance education services in the Wood Buffalo region. Athabasca University operates a satellite campus in Fort McMurray.
<b>Northern Lights Regional Health Services</b>	Community/Preventive health services. Diagnostic and therapeutic services. Acute care (on an emergency, in-patient, and out-patient basis). Continuing care. Home Care (long- and short-term, including palliative care).	Modern 86-bed hospital with medical staff of 22 persons, covering all areas of specialization. Continuing Care Centre with 30 long-term beds and 1 respite bed. Total 1996/1997 budget (including capital): \$28.3 million.

Source: Appendix A

**Table 4-1 Summary of Baseline Information, Urban Service Area of Fort McMurray (continued)**

Organization	Program/Service or Description	Resources
<b>Royal Canadian Mounted Police</b>	Crime prevention and investigation. Next of kin notification. Court services, including victim impact statements. Highway patrol and municipal traffic enforcement. Victim services, including family violence and sexual assault prevention.	45 officers in the urban service areas; likely to be expanded to 52 by the end of 1997. 13 officers in the rural service area; additional funding for 4 positions has been requested. 9 auxiliary constables (civilian volunteers), spending on average 160 hours each per year. The Community Policing and Victim Services programs have two part-time positions and 30-35 volunteers. Total volunteer effort in 1996: 30,000 hours.
<b>Fort McMurray Fire Department</b>	Fire suppression, including airport emergency response. Ground and air ambulance services. Safety code and fire inspections. Emergency 911 dispatching for police, fire, and ambulance services.	Three fire halls in urban service area, plus an airport emergency response truck at the airport. 42 fire fighters, 29 of whom are also emergency medical technicians; 4 senior managers (Fire Chief, Deputy Fire Chief, Fire District Chief, and Chief Training Officer); 7 Emergency 911 dispatchers, 3 of whom are part-time; 4 office support staff. Emergency response agreements with Suncor and Syncrude. Volunteer fire department in Fort Chipewyan, Fort McKay, Saprae Creek, Anzac and Conklin. Total budget of \$5.5 million, of which \$4.9 million is supported by taxes.
<b>Human Resources Development Canada</b>	Administration of the Employment Insurance and other income security programs. Employment counselling and placement. Labour market analysis.	Total staff complement: 12 Number of counsellors: 3 Number of needs determination counsellors: 2
<b>Alberta Advanced Education and Career Development</b>	Career counselling, including courses in resume preparation and job search methods. Short-term skills training programs. Administration of the Apprenticeship program.	2 career counsellors 2 apprenticeship consultants 1 manager Administrative support.
<b>Northeastern Alberta Aboriginal Business Association</b>	Promotion of aboriginal businesses. Facilitation of training and employment placement for aboriginal persons.	Executive Director and administrative support.

Source: Appendix A

**Table 4-1 Summary of Baseline Information, Urban Service Area of Fort McMurray (continued)**

Organization	Program/Service or Description	Resources
<b>Regional Business Development Centre (a program of Western Diversification)</b>	Personal counselling services to residents of the Municipality, Employee & Family Assistance Program (EFAP) to municipal workers and their families, external EFAP services on contract locally and out of the province. Business library in support of small business development. Ad hoc initiatives in support of small business development; current involvement includes housing and doctor recruitment.	Total number of employees: 9. Loan fund of \$3 million. (maximum loan amount is \$70,000, average outstanding loan is \$37,000).
<b>Fort McMurray Visitors' Bureau</b>	Marketing and promotion of local and regional tourism amenities. Provision of tourism information. Production of a community directory. Organization of two annual trade shows.	Member-based organization with annual budget of about \$100,000. Staff includes an Executive Director and seasonal tourist information personnel. "Port of Entry" visitor centre.
<b>Physical Infrastructure</b>		
<b>Housing</b>	Provision of single and multi-family housing by private sector developers.	In early 1996, the urban service area of Fort McMurray had 11,382 occupied and 585 unoccupied dwellings. An estimated 63% consists of single family houses, 23% apartments, and 14% mobile homes. Sapræ Creek is a rural residential subdivision close to the urban service area of Fort McMurray.
<b>Municipal Services</b>	Water treatment and distribution. Sewage collection and treatment. Solid waste collection and disposal.	Relatively new water treatment plant in Fort McMurray with capacity for about 60,000 persons. Sewage plant is capable of handling a population of around 55,000. Landfill site nearing capacity.

Source: Appendix A

**Table 4-1 Summary of Baseline Information, Urban Service Area of Fort McMurray (continued)**

Organization	Program/Service or Description	Resources
<b>Power and Natural Gas</b>	Alberta Power is the main provider of electrical power to the urban service area of Fort McMurray. Northwestern Utilities (NWU) provides natural gas services to residential and commercial customers throughout the Wood Buffalo region.	NWU has 15 full-time and an additional 10-15 seasonal employees (summer months)
<b>Air Transportation</b>	Scheduled air service to Edmonton and Calgary provided by Canadian Regional and Air BC. Scheduled air services to Fort Chipewyan provided by Contact Air. Charter aircraft services (fixed wing, helicopter) provided by a number of companies in Fort McMurray.	Fully equipped airport with runway capable of accommodating jet traffic. Air BC and Canadian Regional use turboprop planes to provide passenger services between Edmonton/Calgary and Fort McMurray. Contact Air has a fleet of nine planes to provide scheduled and charter service.
<b>Water Transportation</b>	Scheduled and unscheduled barge service from Fort McMurray to Fort Chipewyan and points in Northern Saskatchewan and the Northwest Territories.	Tug and barges provided by two private operators.
<b>Land Transportation</b>	Scheduled and charter bus service between Fort McMurray and Edmonton. Freight train service between Lynton Landing to Edmonton. Intra municipal bus service in the urban service area of Fort McMurray.	Highway 63 (paved) from Edmonton to Fort McMurray and Fort McKay up to Peter Lougheed bridge. Highway 881 (paved) from Fort McMurray to Anzac; gravel to Janvier and Conklin. Winter roads between Fort McMurray and Fort Chipewyan and La Loche (Saskatchewan). The former is operated and maintained by Alberta Transportation, the latter by private individuals. Railway operated by Rail Link, from Edmonton to Lynton, just south of the urban service area of Fort McMurray.

Source: Appendix A



**Table 4-1 Summary of Baseline Information, Urban Service Area of Fort McMurray (continued)**

Organization	Program/Service or Description	Resources
<b>Telecommunication</b>	Radio and television service. Telephone service.	Fort McMurray has 2 local AM and FM stations, CJOK and CKYX, respectively. Shaw Communications provides additional 16 radio stations and 54 television channels through its cable connections. Telus is the main telephone service provider.
<b>Land Use</b>	Regional Municipality of Wood Buffalo is the approval authority for all development and building permits. Applications concerning energy resources, including pipelines, are within the responsibility of the Alberta Energy and Utilities Board.	
<b>Regional Economy</b>	Regional economy is dominated by the oil sands industry, with two large operations, Syncrude and Suncor, located just north of the urban service area of Fort McMurray. Oil sands development may increase the oil sands mining operations in the Fort McKay area; commercial in situ operations may develop, mainly in the Conklin/Janvier area. Gas and some conventional oil activity is concentrated mainly in the southern half of the municipality. Forestry activity is dominated by the ALPAC pulp mill in Boyle, which is located outside the Municipality of Wood Buffalo; logging of coniferous saw logs is carried out by Northlands Forest Products. Tourism industry activity is located throughout the municipality, although most of the tourism infrastructure is concentrated in the urban service area of Fort McMurray. The northern part of the municipality is adjacent to the Wood Buffalo National Park.	

Source: Appendix A

#### **4.3.2 Outlying Communities**

Following is a summary discussion of the baseline conditions in the outlying communities, which will be augmented by information gathered by community-based groups in Fort McKay and Fort Chipewyan. The additional information will be available in early 1998.

## **Population**

The population of the rural service area of Regional Municipality of Wood Buffalo, including the outlying communities is estimated at 2,500. Table 4-2 provides the break down by community.

**Table 4-2 Population Estimate, Outlying Communities in the Regional Municipality of Wood Buffalo, 1996**

<b>Community</b>	<b>Population Estimate</b>
Fort McKay	330
Fort Chipewyan	1,200
Anzac	350
Janvier	250
Conklin	200
Gregoire Lake	190

The 1997 population of the rural service area is expected to show a marginal increase over 1996 due to natural population increases.

## **Human Services**

The outlying communities generally provide a modest complement of human services. These are summarized below:

- **Fort McKay** has a Kindergarten through Grade 9 school; some home care and public health resources; and two drug and alcohol abuse workers. Fire protection is provided by a volunteer fire department. The RCMP provides police services.
- **Fort Chipewyan** has a Kindergarten through Grade 12 school, a satellite campus of Keyano College; health services are provided by the Fort Chipewyan Nursing Station and the Nune Health Authority; Family and Community Social Services provide a range of programs, including counseling; Fire protection is provided by a volunteer fire department. The RCMP provides police services.
- **Anzac** has a Kindergarten through Grade 7 school, a drop-in health clinic, backed-up by periodic visits from health nurses from Fort McMurray and a range of FCSS services. Fire protection is provided by a volunteer fire department. The RCMP provides police services.
- **Janvier** has a Kindergarten through Grade 8 school, two resident community health workers, backed-up by weekly visits from a doctor and periodically a dentist. Fire protection is provided by a volunteer fire department. The RCMP provides police services.
- **Conklin** has a Kindergarten through Grade 8 school and weekly visits from a public health nurse. Fire protection is provided by a volunteer fire department. The RCMP provides police services.

***Physical Infrastructure***

All outlying communities indicate outstanding infrastructure needs, including substandard housing and barely adequate municipal services.

All communities are connected by primary or secondary highways to the urban service area of Fort McMurray and the rest of the province. The exception is Fort Chipewyan, which cannot be reached by road except during the winter.

***Summary of Issues***

Some issues of special concern have been identified and are listed below:

- employment, training, and business opportunities;
- transportation to the various plants;
- inadequate municipal and recreational facilities and youth programs;
- human and physical resources of the school system;
- the shortage and adequacy of housing,
- health problems that may be linked to environmental pollution; and
- general social issues, including family and child care, substance abuse, and gaming.

These issues, identified by local area residents, indicate that the needs for human services in many of the communities are relatively high. They guide the impact assessment provided in Section 5.

## 5 IMPACT ASSESSMENT

This section documents the socio-economic impact assessment of the Shell Development Scenario, which assumes that both the base case projects (Steepbank Mine and Aurora Mine, Trains 1 and 2) proceed, as well as the Muskeg River Mine. It covers the impacts on both the region and the province and analyzes the social and economic impacts. The former include impacts on service providers and infrastructure in the region and the latter the income and employment benefits associated with the project.

### 5.1 REGIONAL SOCIO-ECONOMIC IMPACTS

The Muskeg River Mine Project will have an impact on the study area, defined for the purposes of this SEIA, as the Regional Municipality of Wood Buffalo. The project is already contributing to the optimism about the future of oil sands development in the region as evidenced, for example, by an active real estate market.

#### 5.1.1 Employment Impacts

Employment generated by the Muskeg River Mine Project is a key driver of the population growth in the region. And population growth is, in turn, a key variable in the demand for human services, including education, health care, and housing. The construction and operations phase employment impacts are discussed separately below.

#### *Construction*

The construction period associated with the Muskeg River Mine Project will be between 1998 and 2002. Construction in 1999 will focus on the mining infrastructure, including site preparation, construction of the camp and associated services, such as water and sewer facilities, and access roads. Construction of the bitumen extraction facilities, tanks, and associated pipelines will be started in the year 2000. The construction period is scheduled to be complete by the end of the second quarter in 2002.

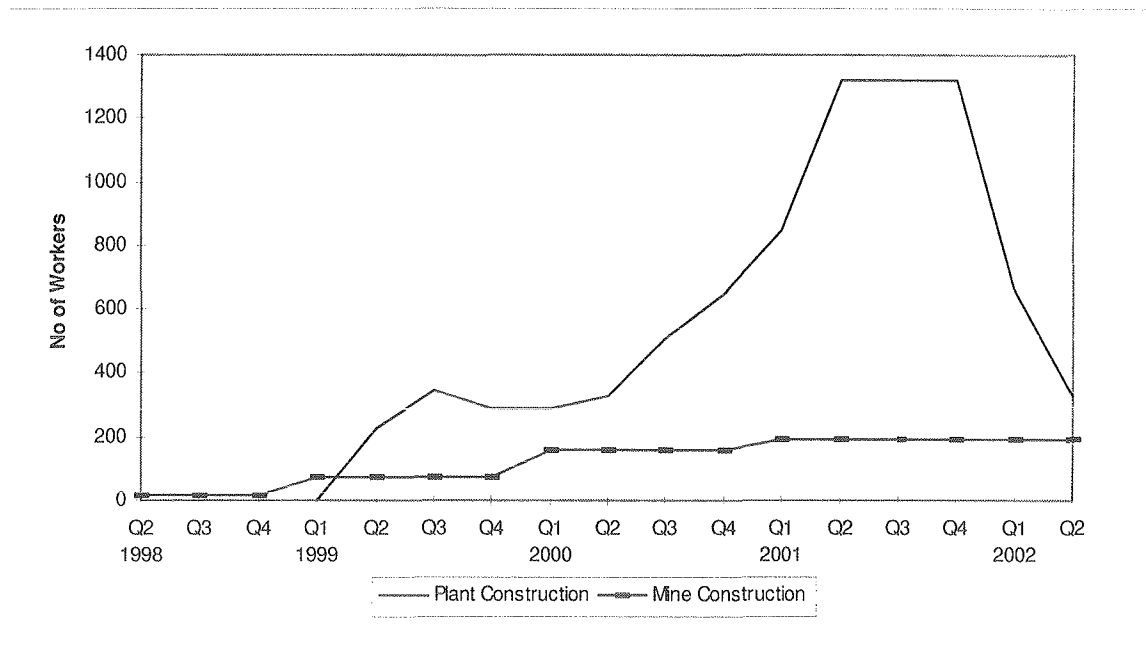
Mining activity will start in 1999 with the removal of overburden and the construction of containment dykes for tailings. The first ore will be mined later in 2001 in preparation for commissioning the extraction facility in 2002.

For this analysis, all activities between 1998 and mid 2002 are considered part of the project's construction phase. This includes both the construction of the physical plant and the initial activities required to open up the mine.

### Construction Work Force Estimate

The construction of the plant and associated infrastructure is expected to generate 1,900 person-years of on-site work. In addition, the mining operations during the construction period will require an estimated 500 person-years. Figure 5-1 shows the number of workers required over the construction period. The figure shows that the construction work force for the plant exceeds 300 workers between the second quarter of 2000 and the second quarter of 2002. It peaks out at 1,300 workers in the last three quarters of 2001.

**Figure 5-1 Muskeg River Mine  
Construction Work Force, 1999-2002**



### Construction Workers' Profile

Table 5-1 provides an estimate of the type of workers that will be required during the construction phase. The construction of the extraction facilities will require the full range of hard construction trades. Pre-stripping the mine, which may be done by an in-house work force or by using contractors, will require heavy equipment operators and heavy duty mechanics.

**Table 5-1 Muskeg River Mine  
Construction Work Force, By Type**

Category	Percentage of Total
<b>PLANT</b>	
Labourer	8%
Carpenter	5%
Cement Mason	4%
Iron Worker	9%
Millwright	5%
Pipe Fitter/Plumber	8%
Boiler Maker/Sheet Metal Worker	3%
Electrician/Instrument Tech	11%
Equipment Operator	17%
Other	29%
Total	100%
<b>MINE</b>	
Equipment Operator	49%
Mechanic	14%
Mechanic's Helper	14%
Electrician	5%
Welders	2%
Pump Operator	3%
Labour	13%
Total	100%

Note: Percentages might not total 100% because of rounding.

## **Operations**

Operations at the Muskeg River Mine are expected to start in the second quarter of 2002. Mining activity starts in 1999 with tailings dyke construction and overburden removal. The latter activity will ensure the availability of mineable oil sands coincident with the start up of the extraction facilities. Mining activities before the start-up of bitumen production are included in the construction phase.

### **Operations Work Force Estimate**

Based on preliminary estimates, the Muskeg River Mine will have a work force of about 800 persons. Of these workers, about 50% will be working in the mine, 40% in the extraction plant, and the remaining 10% in the managerial and administrative positions. Over time, the total work force is expected to change as hauling distances in the mine increase and operating efficiencies in both the mine and the extraction plant are achieved.

With the possible exception of a small office in the urban service area of Fort McMurray, the total operations work force is expected to be on site on Lease 13.

### Operations Workers' Profile

The extraction work force is dominated by operators and maintenance workers. Equipment operators are the dominant trade in the mine. Table 5-2 provides an overview of the trade profile of the operations work force. The administrative and managerial work force, not included in the numbers presented in the table, will reflect the broad range of skills, including human resource professionals, accounting personnel, trainers, and security people.

**Table 5-2 Muskeg River Mine  
Operations Work Force, By Type**

Category	Percentage of Total
<b>PLANT</b>	
Plant Operator/Process Engineer	58%
Electrician	6%
Instrumentation Technician	6%
Mechanic	11%
Mechanic's Helper	9%
Welder	2%
Pipe Fitter	7%
Carpenter	1%
Machinist	1%
Total	100%
<b>MINE</b>	
Equipment Operator	52%
Mechanic	14%
Mechanic's Helper	14%
Electrician/Instrument Technician	4%
Welders	1%
Pump Operator	2%
Labourer	10%
Tailings Crew	4%
Total	100%

Note: Percentages might not total 100% because of rounding.

### 5.1.2 Population Impacts

Employment in general, particularly employment in the oil sands industry, is the key determinant of population levels in the region, especially in the



Urban Service Area of Fort McMurray. This is demonstrated by the marginally declining population in the area between 1986 and 1996, a period in which the employment in the oil sands industry declined.

### ***Urban Service Area***

The population response in the urban service area of Fort McMurray to further oil sands industry expansion has been the subject of a modeling exercise. The Regional Infrastructure Working Group initiated this research, which was conducted by Nichols Applied Management. The resulting urban population impact model, which has been reviewed by Golder Associates, is a computerized tool with three key drivers:

- the construction and operations work forces associated with the oil sands projects (provided by project proponents), and with the residential and commercial construction that is already occurring;
- the gross-up factors or multipliers that relate the direct project employment to the overall employment in the region (published for the province by Alberta Treasury and adjusted for the Wood Buffalo Region); and
- the known percentage of persons by age group who will die in any given year as well as the known probability that women in selected age groups will give birth (based on province-wide mortality and fertility statistics provided by Statistics Canada).

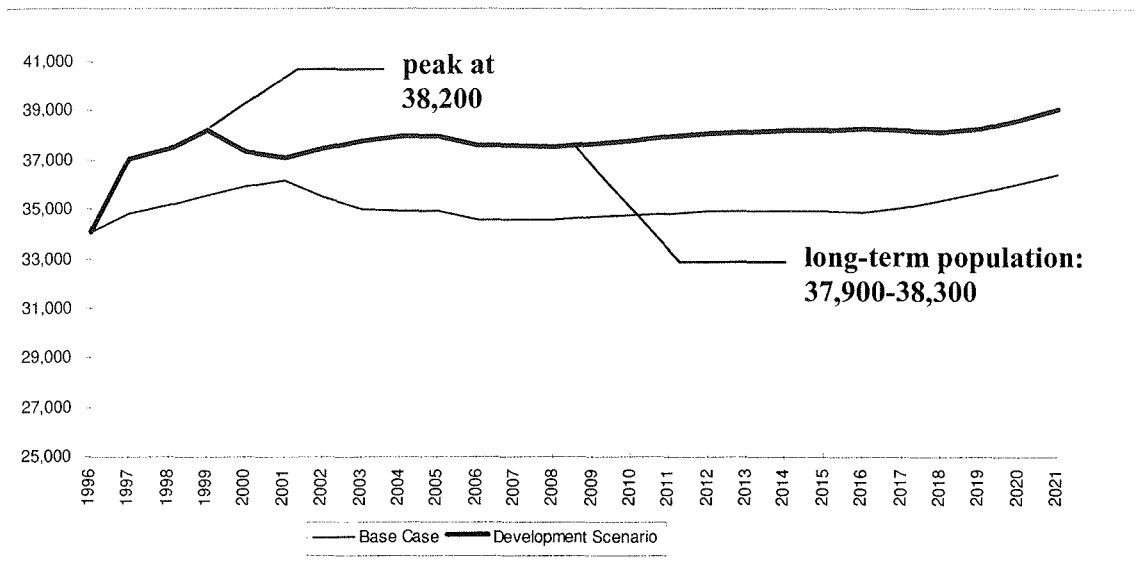
Table 5-3 presents the key variables used in the model and indicates the sensitivity of the population estimates to changes in these variables. The table shows that the model generally dampens the impact of varying any one assumption, indicating that the model results are robust.

**Table 5-3 Urban Population Impact Model, Key Assumptions and Results of Sensitivity Analysis**

	Default Setting	Impact on Population Estimate	
		2001	2021
<b>Ratio of direct jobs to indirect/induced jobs</b>	mine: 1 to 1.26		
	upgrader: 1 to 1.33		
10% higher		+1.4%	+1.0%
10% lower		-1.3%	-1.0%
<b>Total project operations work force:</b>	as per proponents		
10% higher		+0.1%	+1.3%
10% lower		-0.1%	-1.4%
<b>Percent of retired people leaving:</b>	65%		
70% leaving		-0.2%	-2.2%
60% leaving		+0.2%	+2.2%
<b>Labour Force Participation (ages 18 to 60):</b>	85%		
10% higher		-1.7%	-1.7%
10% lower		+2.1%	+2.1%
<b>Housing Starts Per Year:</b>	350		
10% higher		+0.6%	0.0%
10% lower		-0.6%	0.0%
<b>Regional work force outside urban service area:</b>	5%		
2.5% of work force		+0.2%	+0.1%
7.5% of work force		-0.2%	-0.1%

The population forecast of the urban service area of Fort McMurray — including the rural residential area of Sapræe Creek — is presented in Figure 5-2. The figure shows both the Shell Development Scenario as well as the population forecast associated with the base case, as presented in Section 4. The area between the base case and the development case population forecasts is the population impact.

**Figure 5-2 Population Projection, Urban Service Area  
Base Case and Shell Development Scenario**



Note: Base case includes existing oil sands plant, plus Steepbank Mine and Aurora North Mine  
Development scenario is the same as base case, plus the Muskeg River Mine.

Figure 5-3 and Table 5-4 show that the long-term population in the urban service area of Fort McMurray, assuming the Shell Development Scenario, is estimated at 37,900 in 2011 and 38,300 in 2016, similar to the mid-1997 population estimate. The population estimate increases to 39,100 in 2021, mostly under the influence of the number of persons now in their late thirties or early forties, who will retire and who may stay in the area.

Compared to what the population would have been assuming the base case, the incremental population impact associated with the Shell project alone is 3,000 in 2006 and 3,100 in 2011. The impact moderates to around 2,600 persons by 2021, as the number of retirees as a percentage of the total population increases faster in the base case than in the Shell Development Scenario. This impact is relative to the base case, defined as including only the Steepbank and Aurora Mine (Trains 1 and 2) projects. As mentioned above, the current 1997 population has grown under the influence of mostly residential and commercial construction that anticipates both the Shell and other proposed projects. Relative to the 1997 population, the total impact of the Shell project is minimal.

**Table 5-4 Shell Development Scenario  
Population Forecast, 1997-2021.**

	Base Case			Shell Development Scenario			Incremental Impact		
	Urban Service Area	On-Site Camps	Total	Urban Service Area	On-Site Camps	Total	Urban Service Area	On-Site Camps	Total
1997	34,810	560	35,380	37,030	560	37,590	2,210		2,210
1998	35,220	830	36,040	37,490	840	38,330	2,270	10	2,290
1999	35,590	1,020	36,620	38,210	1,580	39,780	2,610	560	3,170
2000	35,960	1,160	37,130	37,340	2,370	39,700	1,370	1,200	2,580
2001	36,160	860	37,020	37,140	1,260	38,400	970	410	1,380
2002	35,530	520	36,060	37,480	610	38,100	1,950	90	2,040
2003	35,030	270	35,300	37,800	270	38,060	2,770		2,770
2004	34,960	300	35,260	38,000	300	38,300	3,040		3,040
2005	34,960	250	35,210	37,990	250	38,250	3,040		3,040
2006	34,560		34,560	37,580		37,580	3,020		3,020
2011	34,850		34,850	37,950		37,950	3,100		3,100
2016	34,920		34,920	38,260		38,260	3,350		3,350
2021	36,450		36,450	39,060		39,060	2,610		2,610

Note: Numbers are rounded to the nearest 10.

The population is expected to increase well during the construction period, peaking at 38,200 in 1999, approximately the same level of the long-term population estimate. This increase relates not to the on-site construction work force, which is assumed to be housed in an on-site construction camp, but to the jobs in town related to servicing the Muskeg River Mine Project and the associated increase in general economic activity in the area. If the mining activities during the construction period are undertaken with in-house rather than contracted resources, some of these people may opt to live in the urban service area of Fort McMurray rather than in the camp, provided accommodation is available.

Table 5-4 also provides an estimate of the population in oil sands project construction camps. These camps are not physically located within the urban service area, but are closely linked to it in terms of servicing. The construction camp population is expected to add an additional 1,200 persons to the area. This estimate is an annualized number. As discussed in Section 5.1.1, the quarterly work force numbers reach a high of 1,300.

### ***Outlying Communities***

Virtually all population impacts associated with the Muskeg River Mine are expected to accrue to the urban service area of Fort McMurray. Two different population dynamics are expected with respect to the outlying communities. They are:

- the possibility that community members with jobs at the Muskeg River Mine Project will move to the urban service area of Fort McMurray to commute from there to work; and
- the possibility of people returning to their home community due to the increasing cost of housing in the urban service area.

In the case of Fort McKay, which is located close by the Muskeg River Mine, it may be possible that community members will work at the mine and live in the community. On balance, the population of Fort McKay is expected to increase marginally under the Shell Development Scenario, while the population levels in the other outlying communities are not expected to be significantly different than under the base case assumptions.

#### **5.1.3 Regional Economic Benefits**

The oil sands industry is the key economic sector in the Wood Buffalo Region and much of its economic infrastructure is geared towards supporting this industry. Consequently, the Muskeg River Mine Project and the general industry expansion will convey significant economic benefits to the region. Shell will use and encourage local businesses where they are competitive and able to meet the company's needs. In addition, the company will work towards filling project jobs with local persons.

The economic benefits to the region will accrue in a number of different ways, including:

- directly through project construction and operational spending on local area suppliers;
- directly through project construction and operational spending on wages;
- indirectly, through spending by project and other affected workers on a wide range of goods and services provided locally.

In addition, the region will benefit by means of increased property taxation income, an issue that will be discussed in Section 5.1.5.

During the 1998-2002 construction period, Shell will invest about \$1.2 billion (\$1997). Of this expenditure, an estimated \$230 million or

almost 20% will accrue to local area persons and businesses. In addition, the operational expenditure of the Muskeg River Mine will add to the total income in the region. Using preliminary expenditure estimates, roughly half of the operating cost will accrue to the local area, much of it in the form of wage income of employees and contractors. Over the period from 1998 through 2025, the Muskeg River Mine Project is estimated to augment the labour and business income in the region by between \$3 billion and \$3.9 billion (\$1997).

This is new spending in the region. The Shell project is the first significant new oil sands plant since the construction of Syncrude's Mildred Lake facilities, and is a clear example of the renewed interest in the oil sands region of Alberta.

Much of this income will accrue to persons and businesses in the urban service area of Fort McMurray, where the bulk of the population lives and where most businesses are located. However, the outlying communities will also benefit from this local spending through the employment of community members and business income of community-based contractors.

#### **5.1.4 Impacts on Service Providers — Urban Service Area**

The Muskeg River Mine Project will provide employment and contracting opportunities to people and companies in the urban service area. It will also place additional demands on local and regional service providers. This section discusses these impacts and presents possible mitigative measures that can be undertaken by Shell to minimize the negative impacts and emphasize the positive ones. The section discusses the Shell Development Scenario, which assumes that only the Steepbank Mine, Aurora Mine (Trains 1 and 2), and Muskeg River Mine proceed. The Regional Development Scenario is discussed in Section 6.

#### ***Housing***

The urban service area of Fort McMurray, in line with other areas, such as Calgary and Grande Prairie, has experienced an upswing in the housing market over the past 18 months. As shown in Table 5.5, over the past 12-18 months, prices for single family homes have increased by more than 40%, albeit from a depressed level. The average price for a detached single family home was \$155,000 in September 1997. Rental accommodation has also become more expensive, with rents for two-bedroom units increasing by 23% between October 1996 and October 1997. Rates for three-bedroom units increased by 12% over the same period.

**Table 5-5 Urban Service Area, Selected Real Estate Statistics**

	1996	1997	Increase
Average price (single family home) <sup>a</sup>	\$108,500	\$155,000	43%
Average rent, bachelor apartment	\$349	\$397	14%
1-Bedroom apartment	\$426	\$524	23%
2-Bedroom apartment	\$516	\$629	22%
3-Bedroom apartment	\$625	\$702	12%

<sup>a</sup> Average price increases relate both to the depressed prices in the pre- 1996 real estate market and the upscale nature of the houses that have been built in 1996 and 1997.

Sources: ReMax, Fall 1997. Quarterly Report, Real Estate Market Synopsis and Outlook. Canada Mortgage and Housing Corporation, November 1997. Rental Market Report.

The urban service area of Fort McMurray has experienced a significant increase in housing starts in 1997. Indications are that about 350 houses and associated commercial developments were built in the area this year and fully used the local construction industry. Servicing for a new mobile home park has been essentially completed, setting the stage for an additional 70 housing units in the near future. The current construction activity indicates that the market anticipates the demand for operations-phase housing related to a range of projects, most of which will not become operational until the year 2002.<sup>2</sup>

The activity in the real estate market notwithstanding, the population increase experienced between 1996 and 1997 has created some housing shortages as evidenced by:

- 0.6% vacancy rates in apartment buildings and a quick turn-over of housing offered for sale; and
- anecdotal evidence of increased numbers of persons per dwelling as families take in boarders or rent out rooms and basement suites.

The estimated 1997 population implies that the average number of persons per dwelling has increased by 5 to 7%.

<sup>2</sup> The urban population impact model developed by Nichols Applied Management under the auspices of the Regional Infrastructure Working Committee models this behaviour of the real estate market by treating the residential and commercial building activity as a separate project starting in 1997. The model recognizes that the housing and commercial construction is in effect an induced impact, i.e. an impact associated with the spending by direct and indirect project workers. It brings the housing-related part of the induced impacts forward and expresses it not as a flow over time but as a capital expenditure up front.



Rising rental rates place additional stress on the resources of lower-income families. The Fort McMurray Housing Authority, which administers a means-based housing subsidy program on behalf of Alberta Municipal Affairs, reports instances of people, who became eligible for assistance due to the increases in rent. To date, the Housing Authority has been able to keep up with the demand for subsidized housing. This is in part related to the well-established relationships that the agency has with some of the larger landlords in the area and a positive response by Alberta Municipal Affairs with respect to expanding the number of subsidized units.<sup>3</sup>

There is some concern about the lack of expansion of the rental sector in the urban service area of Fort McMurray. Although a relatively high percentage of the total housing stock is multi-family rental accommodation, this sector has been stagnant for some time and the current housing construction does not include multi-family rental units. Preliminary plans exist for a 275-unit housing complex in Abasand Heights and a 150-unit facility in the Lower Townsite. These units will likely be developed for sale rather than for the rental market.

Not all new or existing employment opportunities in the area are full-time jobs with high levels of remuneration. Wages in the public sector and the service industry are in line with those in the rest of the province. A number of the public and service sector workers will continue to rely on the rental housing market. Even with respect to the oil industry jobs, many operational jobs are expected to be filled by workers early in their careers, who may need to rely on the rental market for some time.

### **Shell Development Scenario**

The Shell Development Scenario expands the population of the urban service area to 37,800 by the year 2003 and 37,900 by 2011. This population increase is driven by the new operational jobs that are associated with the Muskeg River Mine, new jobs with suppliers to the project, and new jobs in the general economy, servicing the workers. This population increase, which assumes that all construction workers will live in an on-site construction camp, translates into a demand for approximately 1,050 housing units. In the base case, there are about 550 vacant dwellings, which, together with the almost 350 new housing starts in 1997, account for an estimated 900 dwellings. This suggests that most of the demand for housing related to the Shell project can be met by the local construction industry in the near future.

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<sup>3</sup> The Fort McMurray Housing Authority, in cooperation with local area landlords and Alberta Municipal Affairs has added 55 units to its inventory of dwellings that are part of the rent subsidy program.

This swift reaction of the housing market notwithstanding, the emphasis of the current building activity is on single family homes for sale, not on multi-family dwellings for the rental market. It follows that the rental market will remain tight and that rental rates will likely remain at the current levels or higher in the near future. Under the Shell Development Scenario, the demand for subsidized housing is expected to be met without difficulty. This relates to the fact that the population estimate associated with the Shell development scenario is in line with the population impact already experienced in anticipation of multiple projects proceeding.

### **Mitigation**

Shell is proposing to locate a camp on Lease 13 for the duration of the construction. This camp will be sized to accommodate workers associated with the plant and mine construction. Consideration will be given to keeping part of the camp open after construction. This will facilitate the accommodation of specialty trades likely required during the start-up of operations. In addition, it will provide some flexibility for operations workers who have difficulty finding appropriate housing.

Shell recognizes the importance of the housing issues that have been raised by respondents. It is cooperating with the municipality on housing issues and is a member of the Mayor's Housing Task Force, established in mid-1997.

### **Education**

The increase in population experienced by the urban service area of Fort McMurray has not yet translated into a corresponding increase in enrollment at the primary and secondary school level. The 1997 enrollment numbers for the Fort McMurray School District and the Fort McMurray Roman Catholic Separate School District were 8,425, up by about 4% over the previous year.

Under base case assumptions, i.e. assuming only that the Steepbank Mine and Aurora Mine (Trains 1 and 2) will proceed, the number of school-aged children is expected to drop. This happens as the children of the 35-to-45-year-old inhabitants — now the dominant group numerically — graduate from the secondary school system. The number of school-aged children is estimated to decline from the 1996 estimate of 8,300 to an estimated 7,100 in 2013. The decline will reverse itself starting in 2014 as the number of persons retiring from the existing plants increase and the companies hire younger workers with young families to replace them.

### **Shell Development Scenario**

The development of the Shell project will reverse the base case decline in school-aged children, defined here as being between five and 18. This group is expected to increase from the 1996 estimate of 8,300 to 9,000 in 1999, during the Shell project construction period. The demographic shift described above will bring the number of school-aged children back to the 1996 level around the year 2006 and below that number for the rest of the forecast period to 2021. Generally the enrollments associated with the Shell Development Scenario are expected to be between 800 and 900 students higher than the base case. In the early years, this equates roughly to two elementary schools, each with 400-450 pupils, 16 to 18 classrooms, and a similar number of classroom teachers. As these students age, these additional students will place additional demands on the junior high and high schools.

With respect to the physical infrastructure, the school systems are expected to be able to deal with the temporary increases associated with the Shell Development Scenario. The Fort McMurray School District has one school building in excess of current needs. In addition, increased busing, especially at the high school level, can be used to accommodate the increase in demand. The Fort McMurray Catholic School has recently expanded their high school, freeing up space that was used by high school students in other schools. Considering that most residential construction takes place in the Timberlea area, there will likely be a need for some additional facilities, such as portable classrooms there.

The impact of the Muskeg River Mine Project on the post-secondary system will be twofold. First, the number and types of jobs associated with the Shell project provide a focus for local area youths with respect to post secondary (and to some extent their secondary) education. The type of work created by the Shell project is not limited to these trades-oriented jobs and includes a full range of managerial, professional, and administrative positions. Second, the in-house training required by the Shell work force offers contract training opportunities for Keyano College and other institutions. This training may include a range of subjects, ranging from heavy equipment operations and warehousing to information technology and general management.

### **Mitigation and Enhancement**

Shell has cooperated with other oil sands industry proponents and the Regional Municipality of Wood Buffalo in the development of the Urban Population Impact Model, referred to in Section 5.1.2. This model estimates the population by age group, providing detailed planning inputs to the school boards in the area. The development and maintenance of this model will aid the school boards with a range of issues, including facility and human resources planning.

Shell anticipates it will remain involved with the Careers Preparation program in the region, a program that stems from the CAREERS: The Next Generation Foundation based in the Fort McMurray area. It has met with the school boards to review the project and is working with the Training and Education Working Group, a sub-committee of the Regional Infrastructure Working Group. This group, which includes representation of the school boards, Keyano College, the municipality, and First Nations groups, will explore issues related to industry human resource needs and current offerings of the educational institutions.

Shell is considering participating in the CAREERS: The Next Generation Foundation, a partnership between employers, educators, government and labour. The foundation's programs aim to enhance the employability of Alberta youths by creating community partnerships and implementing workplace learning programs. In addition, Shell anticipates becoming an active participant in the Junior Achievement program.

### ***Social Service Agencies***

Most social service agencies have experienced an increase in the demand for their services over the past year and a half. Much of this increase in service demands relates to the estimated 13% increase in population in the area. In addition, a number of service providers are going through system-wide structural changes. For example, training-related services provided by Human Resources Development Canada are being transferred to Alberta Advanced Education and Career Development. Child welfare services are being regionalized. Social services in general have seen a range of changes over the past few years aimed at reducing the number of welfare cases.

Although many agencies' resources are stretched, the current demands for social services are largely being met. For example, the shelters of the Salvation Army and Unity House have some spare capacity and the Fort McMurray Housing Authority is able to meet the demands for subsidized housing.<sup>4</sup>

However, this does not preclude agencies confronting issues that will need continued attention. Caseloads for a number of agencies, such as Family and Community Support Services and AADAC, are high. Budgets for certain services, such as the Unity House shelter program and the Salvation Army Start program are fully allocated. Respondents voice the concern that volunteerism, on which many agencies depend, both in terms of program delivery and fund raising, may decline in the near term as people in the community become busier.

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<sup>4</sup> Personal communication, November 1997.

Some service agencies will experience change by virtue of demographic shifts as the population of the area ages. For example, services to seniors, including housing and health care, are expected to expand. Currently, the number of seniors in the urban service area of Fort McMurray, defined here as people 60 years of age and older, is estimated to be slightly over 1,000. Even under the base case assumptions, the number of seniors is expected to increase to 1,500 in the year 2006 and 3,500 in 2006. In addition, the seniors population may increase as families bring elderly parents to live with them. These numbers presented here are critically dependent on the number of seniors who decide to remain in the area after their retirement. Currently, people providing services to seniors, such as respondents associated with the Golden Years Society, anticipate that an increasing number of seniors will do so, especially those who have strong roots and children and grandchildren in the area. The number may reach 30 to 40% of all retirees.

### **Shell Development Scenario**

The population forecast associated with the Shell Development Scenario brings the long-term population to 38,300 in the year 2016. This estimate is roughly similar to the estimated 1997 population, which anticipates a broader range of projects. It is expected that the long-term stable population of 38,000 to 39,000, associated with the Shell Development Scenario, will actually provide fewer impacts on social agencies than is currently being experienced. At least part of the current demand is caused by unqualified job seekers coming to the region in anticipation of a broad range of projects.

### **Mitigation**

The key mitigative measure proposed by Shell is the use of a full-service camp throughout the construction period. This camp, located on Lease 13, will be sized appropriately to accommodate construction workers. Alcohol and drug use will be prohibited.

The presence, location, and operational practices of the camp minimize the likelihood that construction workers will come to town. Extended work schedules interspersed with long breaks to provide enough time for home visits, including the possibility of transportation back and forth to Edmonton, will further reduce the impacts on the region.

With respect to the operational phase workers, Shell is proposing the following measures to ease the transition of new employees into the community:

- an employee orientation program, outlining the range of services available in the community and how to gain access to them; and

- a company-sponsored Employee Assistance Plan to assist families in distress.

As part of the transition assistance, Shell will encourage new employees to identify specific services that may be required, such as for example special education requirements for dependent children, in order to provide the relevant service providers with some lead time for planning.

In order to assist individual agencies, Shell will develop a corporate charitable donation policy and encourage employees to become active volunteers. Consideration will be given to instituting a “days of caring” program, which will allow employees to provide focused volunteer support to selected organizations. Examples include periodic equipment or facility maintenance for local shelters.

### ***Health Services***

Human health issues are addressed in the EIA, Volume 3, Section E12. Socio-economic health issues raised by The Northern Lights Regional Health Service include:

- ongoing difficulties to attract and retain medical and administrative personnel; and
- a funding formula that:
  - does not reflect the cost of service delivery in the Wood Buffalo region as compared to the rest of the province; and
  - relies on Alberta Health care statistics that reflect the population in the region in an incomplete and lagged manner.

These issues are shared by other health regions in rural Alberta. The health care system is actively addressing the recruitment issue, as shown by a recently announced \$2.5 million fund to help health authorities in the rural parts of the province with doctor recruitment. As much as half a million dollars from this fund may be allocated to the Northern Lights Regional Health Service.

The recent increases in the population in the region have contributed to an increase in health service demands. Over time, health service demands are likely to change even in the absence of further projects. The demographic shift towards more seniors, discussed above, will have health service implications in terms of type of illnesses that present themselves, demands on long-term care, and others.<sup>5</sup>

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<sup>5</sup> The Northern Lights Regional Health Service completed a health needs assessment just when this SEIA was being finalized. Their document discusses the health needs in the region.

Currently, the number of persons per physician in the region is roughly 1200, compared to the provincial average of 600.<sup>6</sup> This is partly because of the difference in age profile between the Wood Buffalo population and that of the province as a whole, as well as the fact that some patients are transferred to Edmonton-area tertiary care facilities. Despite this, these general numbers suggest a shortfall of some 25-30 physicians in the area.

### **Shell Development Scenario**

The impact of the population growth implied by the Shell Development Scenario is not expected to increase health service demands beyond those that are currently experienced. Even during the temporary presence of construction workers between 1998 and 2002, the total service population of the health region is not expected to increase beyond the current level.

However, even with health service demands in line with those experienced currently, there is a need to attract additional medical personnel to the area. Additional funds made available by Alberta Health for recruiting and retaining doctors in rural areas will help, but should be seen in the context of the current physician deficit.

### **Mitigation**

Shell will provide basic medical services to workers on site during both the construction and operations phases of the project. A total of four medical technicians with the appropriate facilities will ensure that the mine site has continuous basic medical service coverage.

Shell and the other oil sands developers have created a forum in the form of the Athabasca Oil Sands Facilitation Committee to coordinate regional cooperation. The Athabasca Oil Sands Facilitation Committee has a full-time resource person, who could work with the Health Region to identify health issues and potential solutions.

### ***Emergency Services***

Emergency services — fire, ambulance, and police — indicate that their resources are currently stretched. The ambulance system has requested an additional eight Fire Fighter/Emergency Medical Technicians, a Medical Services Officer, a Fire Safety Officer, and 1.5 support staff. The stated justification is that additional resources would reduce work loads and response times to acceptable levels and ensure that training of emergency

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<sup>6</sup> Alberta Physician Resources Planning Group Report, February 1997.

personnel is up-to-date and in line with their responsibilities. This includes airport emergency response.

The Royal Canadian Mounted Police has requested an additional six officers for the urban service area, which would reduce the caseload per officer closer to the provincial average, based on the current population estimate of 38,700.

The increases in service demands experienced by the emergency services are largely related to the estimated 14% increase in population between 1996 and 1997. To a minor extent, the service demands also relate to the amalgamation of the City of Fort McMurray and ID 18 into the Regional Municipality of Wood Buffalo in 1995. For example, with amalgamation, responsibility for the training of volunteer rural fire-fighters was taken over by the Fort McMurray Fire Department.

### **Shell Development Scenario**

The Shell Development Scenario is not expected to increase the expected population levels beyond the 38,700 level estimated for 1997. It follows that this scenario does not imply service demands beyond the ones experienced now.

New housing developments are concentrated in Timberlea, at the very edge of the urban service area. This may require the construction of a new fire/ambulance station in the area, or an expansion of the existing station in Thickwood Heights.

### **Mitigation**

As noted under the section on Health Services, Shell will provide full-time basic medical services for workers on their Lease 13 site. The medical personnel will have a fully equipped Advanced Life Support (ALS) ambulance at its disposal to transport patients into the urban service area of Fort McMurray.

For fire and other emergencies, the mine operation will have on-site fire-fighting equipment and trained personnel. The mine will develop an emergency plan.

Shell is interested in establishing a mutual aid agreement with the fire department of the Regional Municipality of Wood Buffalo and the emergency units of Syncrude and Suncor.



## Highway Transportation

Stakeholders have raised several issues related to road transportation on Highway 63 within the urban service area of Fort McMurray and on the portion up to the existing Suncor and Syncrude plants. They include:

- highway safety, especially during the peak hour traffic early in the morning and late in the afternoon. This issue relates to:
  - human safety;
  - the potential for lost work-time at the plants if the highway is blocked; and
  - length of the average work-day if the commute time is extended due to traffic problems.
- transportation of potentially dangerous goods through the urban core of Fort McMurray.

Road issues south of the urban service area of Fort McMurray include the reliance on a single main highway link to the rest of the province and the implied vulnerability of the region to disruptions of traffic. Concerns have also been expressed at the volume and speed of travel on Friday afternoons when people leave for Edmonton.

Table 5-6 presents the average annual daily traffic counts (AADT) collected by Alberta Transportation and Utilities for 1995 and 1996, which are the latest available data.

**Table 5-6 Average Annual Daily Traffic Count (AADT)**

Location	1995	1996
Highway 63, South of Suncor Turnoff	3,600	4,300
Highway 63, North of Suncor Turnoff	2,500	3,200
Highway 63, North of Syncrude Turnoff	690	1,340
Highway 63, South of 69	2,860	2,980

These numbers count every vehicle movement. Assuming that virtually all vehicle movements are part of a same-day return trip, mostly during rush hours, this means that the busiest stretch of highway accommodates 2,150 vehicles in the morning and again in the late afternoon. The numbers show that the traffic in 1996 has increased by 20% as compared to 1995 levels.

The morning rush hour between 6:45 a.m. and 7:45 a.m. accounts for as much as an estimated 65% of the total morning traffic. Assuming a similar pattern for the evening rush hour, it follows that some 3,000 of the total 4,300 daily vehicle movements take place within two one-hour intervals. Hence the traffic congestion during rush hour and the relative low vehicle numbers on the highway during the rest of the day.

## Shell Development Scenario

The construction of the Muskeg River Mine will contribute to the traffic on the highway, both south and north of Fort McMurray and in the urban service area itself. An estimated 5000 large trucks will be required to bring the materials and equipment to the mine site over the two-and-a-half year construction period. Many of these trucks will originate from the Edmonton area. This estimate translates into an average of five to eight construction-related trucks, or 10 to 16 vehicle movements, per day. During peak construction, up to 20 major deliveries are expected per day. In addition, the transportation of fuel to the Lease 13 site may reach as many as 16 truck movements per day in the early part of the operations phase. Fuel shipments in 2014 and beyond may reach 20 truck movements. All these deliveries can be scheduled to avoid peak hour traffic.

These major delivery and fuel-related truck movements are in addition to the general traffic associated with the Muskeg River Mine. The mere fact of having an operation on Lease 13 will cause crew, contractor, visitor, and other traffic. Much of this traffic is expected to coincide with current traffic patterns.

Taken together, operations phase traffic on Highway 63 south of the Suncor turnoff is expected to be around 8% higher than in 1996. The corresponding number for the stretch north of the Mildred Lake turnoff is 34%, starting from a small base. Construction-related traffic may increase the traffic counts temporarily by 15% over the 1996 estimate for the stretch south of the Suncor turnoff and by 50% for the stretch between Mildred Lake and Lease 13, again from a small base.

Traffic on Highway 63 south of the urban service area is expected to increase in line with the anticipated population. This traffic stream is not expected to increase significantly because the population of the Shell Development Scenario is not expected to be much more than 1997 levels.

## Mitigation

Shell proposes a number of measures to mitigate the impact of the Muskeg River Mine on traffic, including:

- having a camp for construction workers;
- scheduling fuel and construction materials/equipment delivery in off-peak periods;
- considering alternative ways of delivering fuel to the site;
- bussing workers during both the construction and the operations phases;
- actively discouraging private vehicles use by construction workers; and

- cooperating with other oil sands developers about scheduling shifts and work hours.

In addition, Shell is working with other oil sands industry developers and the Regional Municipality of Wood Buffalo in the context of the Regional Infrastructure Working Group to define further the existing and expected traffic issues and to bring forward remedial options. Shell, as a sponsor and member of the Athabasca Oil Sands Facilitation Committee, will furthermore support any of this committee's traffic issue recommendations.

### ***Other Infrastructure***

The municipal infrastructure of the urban service area of Fort McMurray is generally adequate. Several segments of the infrastructure are sized for significantly higher population numbers than currently experienced. For example, the water treatment plant is sized for a population of 60,000 or more and the sewage treatment plant for a population of 55,000. Growth in demand for water and sewer services will likely entail some capital spending. It is expected, for example, that a new water supply line and booster station will be needed to service Timberlea and Thickwood Heights.

Notwithstanding an increase in traffic in the urban service area over the last 18 months, the internal road system is generally adequate. Confederation Way, a major access road to Timberlea, which is where most residential development is taking place, may require twinning to keep up with increased traffic volumes. Another concern with the transportation system are the bridges over the Athabasca, which link the downtown core to the largest concentration of residences in Thickwood Heights and Timberlea.

The urban service area is generally well provided with recreational infrastructure, including arenas, a pool, sports fields, and bicycle/ski trails. The area has a downhill ski run at Saprae Creek.

One area that merits mention is the planning infrastructure of the municipality. Planning and approval activities have gone up over the past 18 months, placing stress not only the planning department of the municipality but as well other departments that provide inputs into the planning process.

### **Shell Development Scenario**

The population estimates associated with the Shell Development Scenario do not reach critical municipal infrastructure thresholds. The change from a stable population and outlook to one of population growth and optimism, partly due to the anticipation of the Muskeg River Mine development, has brought general infrastructure needs more in focus and the municipality is in the process of reviewing its infrastructure planning assumptions.

## Mitigation

As with many traffic issues, municipal infrastructure development is outside the scope of activities of oil sands developers. Shell will provide all necessary infrastructure on Lease 13, including roads, water, and sewer systems. Regarding infrastructure issues off site, Shell is working cooperatively with other oil sands developers, the municipality, and the province to identify requirements and formulate options. The Infrastructure Working Group and the Athabasca Oil Sands Facilitation Committee, of which Shell is a member, provide the forum to address issues in a collaborative manner.

### 5.1.5 Municipal Fiscal Impacts

The Muskeg River Mine will convey a positive impact on the fiscal position of the municipality. The mine will pay an estimated \$1.25 million per year in municipal property taxes. In addition, the permanent work force of the mine will stimulate the construction of an estimated 1,050 houses, which in turn will add an estimated \$0.8 million (\$1997) to the property tax revenue of the municipality.

These benefits should be seen in the context of a range of costs associated with a growing community. The Shell Muskeg River Mine is one of the contributors to the demand for increased service delivery with respect to:

- police and fire/ambulance;
- counseling services provided by Family and Community Social Services;
- water and sewer trunk line financing; and
- planning and engineering activities in support of planning.

It is difficult to separate the impact of the Shell project alone from the impact of the Regional Development Scenario. Because the population associated with the Shell project is not expected to exceed the levels currently experienced, the municipal costs associated with the Shell project alone are likely to be modest.

The positive tax impact and generally modest service cost implications of the Shell project notwithstanding, the municipality is experiencing impacts now, whereas increased tax income associated with the development will come gradually. New houses become part of the assessment base in the year that they are built, as do the buildings and improvements on Lease 13. Assessment associated with machinery and equipment (M&E) becomes taxable only at start-up of operations. This is an area of concern and may constrain the municipality with respect to appropriate and timely reaction to the emerging issues.

### 5.1.6 Impacts on Service Providers — Outlying Communities

The following section discusses the socio-economic impacts of the Muskeg River Mine on the outlying communities. Work on these issues by community-based groups is on-going and additional information will be available in early 1998.

The key impact of the Muskeg River Mine is the employment and contracting opportunities that it provides to people and companies in the outlying communities and especially in Fort McKay, which is located close to the mine site. Shell has developed a policy to guide its relations with the people around its Lease 13 site. Two principles of this policy address the employment and contracting opportunities related to the development. They are as follows:

- Shell will use and encourage local businesses — including First Nation and Metis businesses — where they are competitive and can meet Shell's requirements; and
- Shell will ensure that the jobs created by the Muskeg River Mine Project are filled by qualified local people whenever possible — but always on a strictly merit basis. To help make this happen, Shell will work with its neighbours, contractors, educational institutions, and other producers to develop the skills the project requires.

Generally, the Shell project is not expected to have significant impacts on the outlying communities beyond the employment and business development opportunities the project would provide. The exception is traditional land use, which will be affected during the life of the mine. This general statement notwithstanding, the Muskeg River Mine will change the socio-economic conditions in the region. This section provides a discussion of these impacts.

#### ***Population***

##### **Fort McKay**

Fort McKay is a small community located 55 km north of the urban service area of Fort McMurray. Syncrude's Mildred Lake site is approximately 15 km to the south of Fort McKay. The Aurora Mine and Muskeg River Mine will be located 12 km to the northeast of the community and on the opposite side of the Athabasca River.

An estimated 80% of the 330 persons in Fort McKay belong to the Fort McKay First Nation, 15% are Metis, and the balance have different backgrounds.

### **Shell Development Scenario**

All outlying communities are expected to see two different types of population impact:

- community members with jobs at the Muskeg River Mine Project moving to the urban service area of Fort McMurray to commute from there to work; and
- people returning to their home community due to the high cost of housing in the urban service area.

In the case of Fort McKay, which is located close by the Muskeg River Mine, it may be possible for community members to work at the mine and live in the community. On balance, the population of Fort McKay is expected to increase marginally under the Shell Development Scenario

### **Mitigation**

If the community is interested in pursuing the idea, Shell is willing to explore the feasibility of establishing a worker pick-up point at the Fort McKay turnoff. This would make it more feasible for community members to work at the Muskeg River Mine and stay in Fort McKay, thus contributing to population growth.

### **Other Outlying Communities**

#### **Shell Development Scenario**

There are concerns that outlying communities actually may experience a decrease in population as eligible workers take up positions with the Shell project and migrate to the urban service area of Fort McMurray.

### **Mitigation**

With respect to the construction period, the anticipated shift structure and the use of a construction camp will allow workers from the outlying communities to be employed at the Lease 13 site, while remaining within their communities. This will counter a possible population decline.

The operational plan for the mine includes workers commuting daily between the urban service area of Fort McMurray and the site. For those communities south of the urban service area, this may provide the opportunity to set up a commuter service to connect to the commuter bus service, thus reducing the incentive for community workers to move to the urban service area. In addition, the camp may remain open for some time after the end of construction should the local housing and transportation infrastructure not be able to react as needed. This would, at least

temporarily, provide opportunities for people to work at the mine, while remaining in their home communities.

## ***Housing***

### **Fort McKay**

Housing issues, including crowding, have been identified by community members in Fort McKay. Currently, there are approximately 110 dwellings in the community.

### **Shell Development Scenario**

Insofar as the Muskeg River Mine development brings community members back to Fort McKay, there will be a need for additional housing. The number of returning community members is not known with any certainty.

## **Mitigation**

Shell is not in the business of housing development. However, the company will work directly with the community and collectively with other oil sands developers to ensure that housing issues are identified, documented, and brought forward to the appropriate agencies.

### **Other Outlying Communities**

Housing is an issue in all outlying communities. Some of the housing stock is substandard and generally, there is a shortage of adequate houses. The Muskeg River Mine is not expected to induce population growth in the other outlying communities, hence no project-induced demand for housing is anticipated.

## ***Education***

Northlands School Division is providing primary and secondary school services in the outlying communities as outlined in Table 5-7. Students are required to move to the urban service area of Fort McMurray or elsewhere for those grades not offered in their community.

Keyano College has a campus in Fort Chipewyan, offering adult upgrading and post-secondary courses.

**Table 5-7 Outlying Communities,  
Schools by Grade Levels by Community**

<b>Community</b>	<b>Grade Levels</b>
Fort McKay	Kindergarten through grade 9
Fort Chipewyan	Kindergarten through grade 12
Anzac	Kindergarten through grade 6
Janvier	Kindergarten through grade 8
Conklin	Kindergarten through grade 8

### **Fort McKay**

The Elders, brought together in a workshop organized as part of the social impact assessment of the Muskeg River Mine, expressed strong concerns regarding the education of young community members. Their concerns include:

- the lack of parental involvement in their children's education;
- the lack of relevance of the school curriculum; and
- the level of motivation among students.

The Elders see education as a critical component of community development.

### **Shell Development Scenario**

School enrollment may experience a marginal upward trend as community members working at the Shell plant or moving out of the urban service area of Fort McMurray return to Fort McKay.

### **Mitigation and Enhancement**

The community in general and the elders specifically recognize the importance of education for the well-being of the people and community of Fort McKay. As part of the ongoing dialog between the community and Shell, the company has indicated a strong interest in working with the youths to press upon them the value of education. Shell will consider:

- participating in career days and generally making presentations to the students regarding the Muskeg River Mine, outlining the types of work and skills associated with working for the mine; and
- instituting an aboriginal scholarship program.

In addition, students from Fort McKay may benefit from Shell's education-related activities, discussed in Section 5.1.4.



## **Other Outlying Communities**

### **Shell Development Scenario**

Education is a concern in all communities. However, the Muskeg River Mine is not expected to induce population growth in the other outlying communities. No impact on the school system in the communities of Fort Chipewyan, Anzac, Janvier, and Conklin is therefore anticipated.

### **Mitigation**

As mentioned above, Shell is committed to working with the communities to support the educational goals of the students. The mitigative measures discussed above will be extended to all outlying communities. Shell Canada has a corporate policy on investment in education and this policy will be extended to include Fort McKay and the other outlying communities.

## ***Social Service Agencies***

### **Fort McKay**

Elders expressed a range of concerns about social issues, including family and child care, drug and alcohol abuse and the lack of availability of aftercare for those who return from rehabilitation programs, crime levels, and the prevalence of gaming, especially bingo and VLTs.

The social service delivery in the community rests with the part-time nursing staff (home care and public health), a community health representative, and two drug and alcohol abuse workers. People from Fort McKay have access as well to social service agencies in the urban service area of Fort McMurray.

### **Shell Development Scenario**

The Muskeg River Mine will likely induce a marginal increase in the population. This will likely lead to an increase in service demands.

### **Mitigation**

Shell recognizes the special circumstances of the community of Fort McKay. As a direct neighbour, the company is interested in developing a good working relationship with the community and assisting it to manage its development. The company anticipates establishing and maintaining open lines of communication.

The Shell Employee Assistance Plan will be available to Fort McKay members working for Shell. The company is interested in exploring with the community how best to structure the plan. In addition, Shell will develop a corporate charitable donation policy and encourage employees to become

active volunteers. Consideration will be given to a “days of caring” program, which will allow employees to provide focused volunteer support to selected organizations.

### **Other Outlying Communities**

#### **Shell Development Scenario**

The Muskeg River Mine Project is not expected to induce population growth in the other outlying communities. It follows that no project-induced impacts on the demand for social services is anticipated.

### **Mitigation**

Community members working for Shell will be covered by the company’s Employee Assistance Plan.

### ***Health and Emergency Services***

All outlying communities fall within the boundaries of the Northern Lights Regional Health Service. Most health services must be obtained in the urban service area. The Fort McMurray Fire Department provides ambulance services, including air evacuation.

Fire and police services are provided by the RCMP and the Fort McMurray Fire Department, respectively. There are volunteer fire crews in Fort McKay, Fort Chipewyan, Anzac, Janvier, and Conklin.

The RCMP has requested four additional officers for the rural area of the Regional Municipality of Wood Buffalo. The Fort McMurray Fire Department has requested additional resources, including a Fire Training Officer, who would be charged with training both the professional force in the urban service area and the volunteer forces elsewhere.

### **Fort McKay**

Fort McKay residents, including the elders, have expressed concerns regarding the water quality and general health issues, including the incidence of diabetes, asthma, tuberculosis, and a variety of skin diseases.

The elders suggested that training a community member to become involved in environmental monitoring would provide not only obvious benefits to the person involved, but would also convey benefits to the community as a whole. These benefits include increased awareness of and confidence in the environmental programs and better water quality monitoring.

### **Shell Development Scenario**

The impacts of the Shell Development Scenario on human health are discussed in the EIA, Volume 3, Section E12 of the EIA document. Section 5 of this document analyzes the impact on health service provision. Most of the health impacts will be felt in the urban service area of Fort McMurray, where most health services are located. The marginal increase in population that may occur in Fort McKay will increase the demands on the public health nurse who visits the community.

### **Mitigation**

Shell will provide basic medical services at its Lease 13 site. It will also work with the other plants and the municipality to optimize the medical and emergency services. The Muskeg River Mine Project will increase the number of ambulances and trained medical technicians in the immediate area of Fort McKay and improve emergency medical services in the area.

Emergency service and health issues can be included in the work of the Athabasca Oil Sands Facilitation Committee if required. This committee provides a high-level forum for the identification of a range of issues and the exploration of alternative solutions.

### **Other Outlying Communities**

#### **Shell Development Scenario**

The Muskeg River Mine Project is not expected to induce population growth in the other outlying communities and no project-induced impacts on the demand for health and emergency services are anticipated.

### **Mitigation**

The trained paramedics and emergency facilities at the Shell site will increase the total amount of basic medical services in the region. The company will seek to work with other emergency service providers to optimize the regional system, thus improving the overall emergency system efficiency.

### **Road Transportation**

#### **Fort McKay**

#### **Shell Development Scenario**

The development of the Muskeg River Mine will increase the volume of traffic on Highway 63, including the stretch at the Fort McKay turnoff. Traffic volumes during the operations phase are expected to increase from the currently estimated 1,340 vehicle movements, to 1,800 movements, an increase of 34%. Much of this traffic relates to the hauling of fuel to the

Lease 13 site. Traffic counts may increase as much as 50% during the construction of the Muskeg River Mine. Notwithstanding these increases, Highway 63 at the Fort McKay turnoff will remain 60% below the volume south of the Suncor turnoff.

## **Mitigation**

Shell proposes a number of measures to mitigate the impact of the Muskeg River Mine on traffic, including:

- having a camp for construction workers;
- scheduling fuel and construction materials/equipment delivery in off-peak periods;
- considering alternative ways of delivering fuel to the site;
- bussing workers during both the construction and the operations phases;
- actively discouraging private vehicle use by construction workers; and
- cooperating with other oil sands developers about scheduling of shifts and work hours.

In addition, Shell is actively working with other oil sands industry developers and the Regional Municipality of Wood Buffalo in the Regional Infrastructure Working Group to define further the existing and expected traffic issues and to bring forward remedial options.

## **Other Outlying Communities**

### **Shell Development Scenario**

The Muskeg River Mine Project is not expected to increase demands on the road system in other outlying communities with the exception that population growth, especially in the urban service area of Fort McMurray will likely increase traffic on Highway 63 south of the urban service area of Fort McMurray. Lease 13 traffic will increase the traffic volume on the southern section of the winter road to Fort Chipewyan.

## **Mitigation**

The mitigation measures described above apply to the other outlying communities as well.

## **Other Infrastructure**

### **Fort McKay**

There are a number of issues related to the municipal infrastructure of Fort McKay, including:

- the operation of the water treatment plant;

- the contamination of ground water by the solid waste disposal grounds; and
- the capacity of the central sewage system.

Generally, the concerns regarding the municipal infrastructure cover both the physical plant and operations.

#### **Shell Development Scenario**

The expected increase in population will increase demands on the water, sewer and solid waste systems. This may require expansion of at least the sewage system.

#### **Mitigation**

Shell is committed to working with the community to identify issues, including municipal infrastructure issues, at an early stage. It will also work with the community to ensure that the appropriate agencies are aware of identified issues and that appropriate solutions are found.

#### **Other Outlying Communities**

##### **Shell Development Scenario**

The Muskeg River Mine Project is not expected to increase demands on the municipal infrastructure of the other outlying communities.

#### **Mitigation**

No mitigative measures have been identified.

### **5.1.7 Impacts on Traditional Land Use**

Traditional land use is addressed in the EIA. The following section discusses briefly the socio-economic aspects of traditional land use.

#### ***Shell Development Scenario***

The Muskeg River Mine is located on land that is currently used for a number of traditional uses, including:

- trap lines;
- hunting;
- spiritual uses;
- berry picking;
- herb gathering; and
- tree harvesting for fire wood and construction.

These traditional land uses will be disturbed during the 20- to 25-year period of mine operations. Exploration and resource delineation activities since the mid-1950s have already had an impact on traditional land use, as they made the area more readily accessible.

Elders in Fort McKay stressed the need to be sensitive to traditional uses when timing the mine construction activities. For example, beavers should be harvested only when their pelts are fullest and thus have commercial value and the tree cover should be removed only in phases. Otherwise, this reduces the ability of the wildlife, and the hunters and trappers who depend on it, to adapt.

### ***Mitigation***

The key long-term mitigation strategy with respect to traditional land use is the mine closure plan. This plan outlines the landscape that will be created at the end of the mine's economic life. Shell is interested in working with the outlying communities to define this post-mine landscape and to optimize its carrying capacity for wildlife and plant growth.

Mine closure plans come into effect well before the end of the mine's operations. The mine plan is developed in such a way that mine waste is used to fill mined-out pits as soon as practical, thus working towards reclamation of land throughout the life of the mine.

Shell has already started with a process to compensate trappers for the disturbance caused by the Muskeg River Mine. This compensation is already in place with respect to the 1997/98 winter drilling program and the construction of an extraction pilot project.

## **5.2 Provincial and National Economic impacts**

### **5.2.1 Introduction**

This section of the report discusses the commercial viability of the Muskeg River Mine Project and examines its economic implications, not from a regional context, but from the perspective of the provincial and national economies. The economic analysis includes an examination both of the broad income and employment impacts of the project and of the economic efficiency of the project as measured by net social benefits.

### **5.2.2 Commercial Viability**

The project meets Shell's internal return-on-investment and other financial criteria. It will contribute to the overall profitability of Shell's oil sands operations, improve the competitiveness and viability of the oil sands

industry, and increase the ability of the industry to attract investment and to expand in the future.

### **5.2.3 Income and Employment Impacts**

Project expenditures constitute income for suppliers of goods and services. The recipients of this income in turn spend part of it on supplies and services, thus creating income for a second set of recipients. In this manner, the Muskeg River Mine will have an income impact on the provincial economy. This section presents estimates of the direct and aggregate income and employment impacts of the project during its construction and operational phases.

#### ***Construction Phase***

##### **Income Impacts**

Table 5-8 provides estimates of the geographic distribution of construction expenditures and hence the direct income impacts associated with the mine. Almost 60% of the construction expenditures will accrue directly to the provincial economy. The relatively high foreign content relates to the fact that virtually all large mobile equipment (for example, heavy haulers, high capacity shovels, and crushers) are procured from foreign suppliers.

The direct income impacts of the mine construction on the Alberta economy are estimated to total \$727 million, while an additional \$143 million will accrue to the rest of Canada.

**Table 5-8 Muskeg River Mine,  
Construction Expenditures by Geographic Source**

	Alberta	Other Canada	Foreign	Total
	----- 1997 \$100 thousand -----			
Engineering	80,500	4,500	4,500	89,500
Labour	339,600	0	0	339,600
Equipment	54,500	70,900	347,400	472,800
Materials	252,700	67,400	16,800	336,900
Total	727,300	142,800	368,700	1,238,800
Percent of Total	59%	12%	30%	100%

Totals may not add due to rounding

The income that will accrue to Alberta and to the rest of Canada from the construction of the Muskeg River Mine will be compounded through the subsequent spending and re-spending of the new direct income stimulus. Table 5-9 provides estimates of the direct and of the aggregate (direct, indirect and induced) impacts of the construction phase. The total income impacts of the project are expressed in terms of GDP and household income.<sup>7</sup> The analysis indicates that the project will increase the province's gross domestic product by a cumulative \$980 million and household income by \$680 million in the period between 1998 and the year 2002.

**Table 5-9 Muskeg River Mine  
Total Construction-Related Income Impacts to Alberta**

	Direct Impact	Direct, Indirect, Induced Impacts	
		GDP	Household Income
	-----1997 \$ million-----		
Muskeg River Mine	1,223	980	680

#### Employment Impacts

The design and construction of the Muskeg River Mine will require an estimated 3,000 person-years of direct employment, including engineering. In addition, the construction expenditures will generate employment among

<sup>7</sup> These estimates were derived using industry and commodity intensity ratios for the Alberta economy published in Alberta Treasury, *Alberta Economic Multipliers*, 1996.



suppliers (indirect employment) and across other sectors of the provincial economy (induced employment). The total direct, indirect, and induced employment impacts to the province will equate to 6,600 person-years.<sup>8</sup> Those employment impacts will be largely concentrated during the period 1998 to 2002.

## **Operations Phase**

### **Income Impacts**

The operating expenditures of the Muskeg River Mine are expected to vary from year to year. The preliminary operating cost estimates available are subject to revision as the plant operations are started up and operating efficiencies are obtained.

This analysis uses operating costs in the range of \$225 to \$300 million (\$1997) per year. An estimated 80% of the operating costs, or \$180 million to \$240 million annually, will be spent in Alberta. Labour costs are a large component of the operating costs and virtually all of this expenditure will accrue to Alberta-based workers.

As with the construction-related income impacts, these expenditures constitute income for workers and a range of suppliers of goods and services. The total direct, indirect, and induced income impacts to Alberta associated with the operation of the Muskeg River Mine are estimated at between \$220 million and \$280 million annually in terms of the province's GDP and between \$110 million and \$145 million annually in labour income.

### **Employment Impacts**

The operation of the Muskeg River Mine will require approximately 800 person-years annually of employment. The total employment among suppliers and, indirectly, across a spectrum of economic sectors in the province is estimated at 1,700 person-years annually.<sup>9</sup>

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<sup>8</sup> The total direct, indirect, and induced employment is estimated using multipliers published in Alberta Treasury, *Alberta Economic Multipliers*, 1996. The appropriate multipliers are the closed model industry multipliers for the construction and mining industries.

<sup>9</sup> The total direct, indirect, and induced employment is estimated using multipliers published in Alberta Treasury, *Alberta Economic Multipliers*, 1996. The appropriate multipliers are the closed model industry multiplier for the mining industry and the business services industry.

#### 5.2.4 Net Social Benefits

The Muskeg River Mine adds to the value of the province's resources by taking oil sands and turning them into bitumen, which in turn can be made into refinery feedstock. The construction and operation of the Muskeg River Mine also imply the use of real resources, which are, therefore, unavailable for other uses. The project, in other words, entails economic costs to the province.

The net social benefits associated with the mine are equal to the total economic benefits (or real resource creation) minus the economic (or real resource use) cost of the project. The economic costs and benefits are defined as follows:

- the economic costs associated with the project equate to Shell's capital and operating costs associated with the Muskeg River Mine, after making adjustments for property taxes, and other financial outlays that imply a transfer rather than consumption of resources and thus do not constitute economic costs; and
- the economic benefits equate to the value of the bitumen, which is the product of the mine.

In order to estimate the net social benefits of the Muskeg River Mine, the price of bitumen has been applied to the mine's total production. An anticipated bitumen price at Scotford has been used and converted to a price at the Lease 13 site by backing out an appropriate pipeline tariff.

The undiscounted net social benefits (NSB) of the Muskeg River Mine over the life of the project are estimated to be \$3.8 billion. In other words, the Muskeg River Mine operation conveys a significant net economic benefit to the provincial and national economies.

Most of the net social benefits accrue to Alberta or Canada in the form of provincial royalties and federal and provincial taxes. Over the 1997 to 2025 period, 33% of the undiscounted net social benefits accrue to Alberta and 22% to the federal government, for a total of 55% of all net social benefits. In addition, an estimated \$30 million will accrue to the municipality in the form of property taxes. The balance flows to the owners in the form of returns on their investment. Table 5-10 presents the breakdown of the NSB of the Muskeg River Mine.

**Table 5-10 Muskeg River Mine  
Net Social Benefits by Recipient**

	<b>Total</b>	<b>NPV @ 8%</b>
	-----1997 \$ million ---	
Provincial Royalty	800	175
Federal Income Taxes	850	175
Provincial Income Taxes	425	88
Property Taxes	30	15
Owners Net Cash Flow	<u>1,650</u>	<u>175</u>
<b>Total</b>	<b>3,765</b>	<b>628</b>

Totals may not add due to rounding.

The benefits accrue over time and it is appropriate to express the future flow of benefits in present value (NPV) terms using a real discount rate of 8%. As shown in Table 5-10, the NPV of the net social benefits is estimated at \$628 million over the 1997 to 2025 period.

The NSB estimates presented here do not account for additional spending on the part of the municipality or the provincial and federal governments on infrastructure. These latter expenditures would decrease the NSB.

### 5.2.5 Other Impacts and Benefits

The development of the Muskeg River Mine will convey other provincial economic benefits that are not reflected in the income and employment impact assessment or the net social benefits analysis. These benefits are summarized below:

- **Provincial economic goals and objectives.** The project is supportive of the province's goals to attract new investment, to diversify and sustain the economy through the upgrading of resources and the expansion of non-conventional oil development, to increase exports, and to promote balanced regional growth.
- **Provincial fiscal objectives.** The province is actively pursuing a goal of fiscal restraint accompanied by government deficit and debt reduction. The project will contribute directly to the resource revenues received by the province and will increase personal, corporate, and other tax revenues through the employment and economic activity induced by the project. The oil sands industry now accounts for roughly one-tenth of non-renewable resource revenues.
- **Oil sands industry development.** The project will be the first significant commercial development of a new oil sands project in the region since the Syncrude plant. It will contribute, and it already has

contributed, to the change in outlook in the region, and will make additional projects more likely. Further expansion in the oil sands is important to off-set declines in the province's conventional oil industry.

- **Secondary industry development.** The oil sands industry provides benefits to a wide range of manufacturing and service businesses in the region, in the province, and in other parts of Canada. These businesses are supported through the construction and on-going capital replacement and operating activities of the existing commercial oil sands projects. The increasing operational scale of the industry and the evolution of a more incremental and continuous pattern of capital expansion will also provide greater business opportunities for domestic suppliers as well, across a wide cross-section of product and service areas. Unique requirements of the oil sands industry has had the effect of encouraging the development of certain specialized competencies and capabilities among some suppliers, which in turn has increased their export opportunities.

Shell's research and development activities support scientists, technologists, and support personnel and the firm participates extensively in collaborative research initiatives through universities and government research organizations and with others in the industry. Those activities have spawned a number of major improvements in oil sands mining and processing that have improved the efficiency of its own operations and enhanced the commercial performance and investment prospects of the industry generally.

These economic benefits, expressed in qualitative terms, reinforce and compound those more explicit measurements of project economic impacts described earlier in the document.

## 6 REGIONAL IMPACT ASSESSMENT

Shell is one of several oil sands companies with plans to develop a project in the Wood Buffalo region. This section of the report documents the findings of the cumulative socio-economic impact analysis of the proposed oil sands developments on the Wood Buffalo area. The Regional Development Scenario includes the following projects in addition to those included in the Shell Development Scenario:

- Suncor's Millennium project, a \$2.2 billion upgrader and mine expansion;
- Mobil's Oil Kearn Oil Sands Mine, a \$1 billion "grass roots" mine development;
- Gulf's Surmont Commercial Oil Sands project, an \$800 million in situ development; and
- Syncrude's \$3 billion upgrader expansion project, which is part of the Syncrude 21 suite of projects.

All these projects have been announced, but do not yet have regulatory approval.

In addition, the Regional Development Scenario includes a project by Petro-Canada in the Fort McKay area and by Japan Canada Oil Sands at Hangingstone, south of the urban service area. These projects have not been formally announced, but the companies are actively pursuing them. Finally, the Regional Development Scenario includes the Aurora Mine, Trains 3 and 4, which have been announced and have received regulatory approval, but the timing of which was uncertain before the announcement of Syncrude's upgrader expansion project.

Taken together, these projects indicate that oil sands development in the Wood Buffalo region has now shifted to a multi-firm, multi-project model. This necessitates increased cooperation between firms and the municipality to determine the magnitude of the cumulative impacts. Mitigation also increasingly requires cooperation and several cooperative initiatives have been undertaken. From a socio-economic perspective, the most important initiatives are the Regional Infrastructure Working Group, which includes representatives of oil sands developers and the municipality and the Athabasca Oil Sands Facilitation Committee, which includes high level representation of three levels of government and industry. Other cooperative and collaborative committees are in existence as well, focusing mainly on environmental issues.

The cumulative effects can only be identified in a preliminary way because many impacts will take some years before they are fully experienced and

understood. The following section identifies the cumulative impacts in general terms. The methodology used to assess these impacts is outlined in Section 3 and consists of comparing and contrasting the “without” or base case with the “with” development case. The “with” development case here is the Regional Development Scenario.

## 6.1 Cumulative Work Force and Population Impacts

### 6.1.1 Cumulative Work Force Impact

Table 6-1 provides an overview of the estimated and approximate construction work forces associated with the Regional Development Scenario. It shows that the total number of construction workers peaks at 7,500 workers in the year 2000. As a number of projects are in a relatively early stage of development, these results should be interpreted as order-of-magnitude estimates only. The table does indicate that impact of the Muskeg River Mine is only one of several contributors to the total demand for workers in the region.

**Table 6-1 Cumulative Construction Work Force Estimates**

	Suncor Steepbank Millennium	Syncrude 21	Shell Muskeg River Mine	Mobil Kearl Oil Sands Mine	Gulf Surmont	PetroCan	JACOS	Total
1997	500	100						600
1998	500	600				100	10	1,210
1999	1,000	2,200	600		300	300	10	4,410
2000	2,400	3,300	1,300		400	100		7,500
2001	1,100	1,500	400	200	300		10	3,510
2002		700	100	600	200			1,600
2003		400		500	400			1,300
2004		300			300			600
2005		400			400			800

With respect to the operational employment in the region, the Regional Development Scenario implies about 2,700 new jobs. Few new operational jobs are expected in the near term. Most of them will likely materialize in the 2002 through 2004 period.

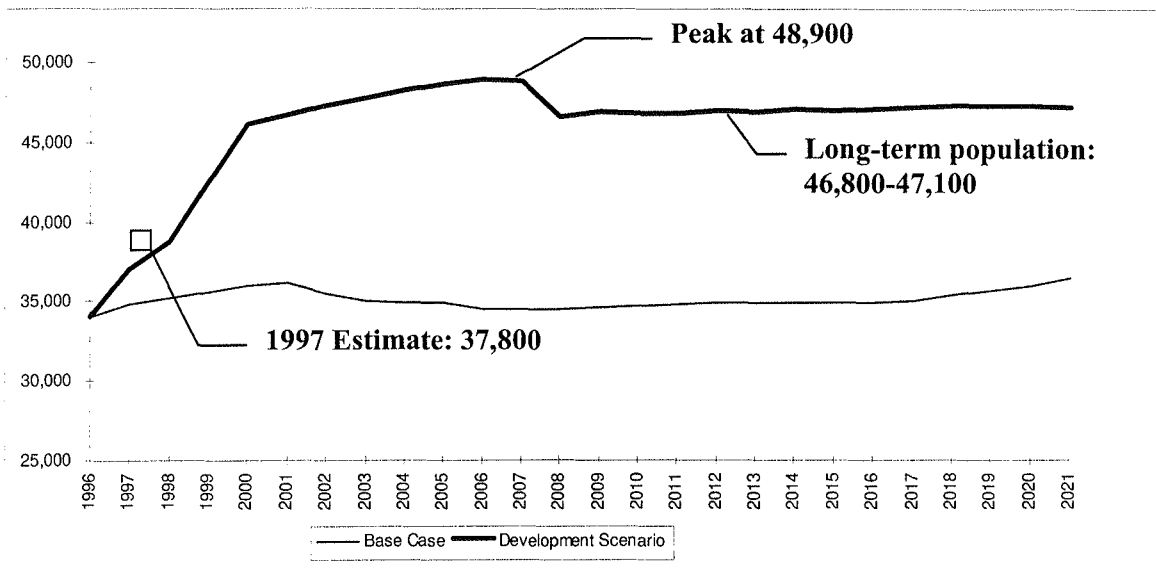
The oil sands projects in the Wood Buffalo region contribute to the increasing demand for skilled workers in the province. Demand for skilled workers is expected to grow at 4 to 5% per year between now and the year 2005. The growth in demand, driven largely by large industrial projects throughout the province, will be met from the current supply of skilled

workers, new apprentices, and possibly from new in-migrants to the province. Spot shortages of specific trades are likely to occur over the next five to seven years, but no large-scale labour shortage is expected.

### 6.1.2 Cumulative Population Impact, Urban Service Area

Direct project work forces are the key driver for the population in the area. This holds true for individual projects as well as cumulatively for all projects. Figure 6-1 gives the population estimate assuming that all projects in the Regional or Regional Development Scenario will go ahead. This assumption may or may not hold or may be conservative if other projects come forward.

**Figure 6-1 Population Projection, Urban Service Area  
Base Case and Regional Development Scenario**



Note: Base case includes existing oil sands plant, plus Steepbank Mine and Aurora North Mine. Development scenario includes Muskeg River Mine, Mobil Kearn Oil Sands Mine, Suncor's Millennium Project, Syncrude 21 suite of projects, Gulf Surmont and some smaller in situ projects.

The long-term population in the urban service area of Fort McMurray, assuming the Regional Development Scenario, is estimated at 46,800 in 2011 and 47,100 in 2016, or a 21% increase over the 1997 population estimate. The population estimate increases to 47,200 in 2021, mostly under the influence of the significant number of persons now in their late thirties or early forties, who will retire and who may stay in the area.

The urban service area will see marginally higher population levels during the construction phase of the projects. The population is expected to peak at 48,900 in 2006.

The urban service area will be influenced by the construction camps to be built on the project sites, but which will draw on some services. The total camp population on an annualized basis is expected to peak at 6,300 in the year 2000.

### **6.1.3 Impacts on Service Providers — Urban Service Area**

The range of projects included in the cumulative impact assessment will place additional demands on local and regional service providers. This section discusses these impacts.

#### ***Housing***

The housing demand related to the Regional Development Scenario is estimated to be over 3,800 dwelling units. If the current level of building activity is sustained over time, the residential and commercial construction period will likely extend for an 11-year period. Assuming that the current capacity of the local construction industry does not expand beyond the estimated level of 350 dwellings per year, there may be a shortage of housing of about 2,700 houses in the year 2000, tapering to 1,900-2,000 in the year 2005. Housing supply and demand is expected to be roughly in equilibrium by 2008. The balance is restored under the influence of both a reduction of housing demand as the construction period of most projects is completed and the supply of houses grows.

This disequilibrium in the housing market means that housing will remain in short supply during this 11-year period, necessitating a continued reliance on basement suites and rental room accommodation for a portion of the population.<sup>10</sup>

The continued short supply of housing in the urban service area of Fort McMurray will reflect itself in very low vacancy rates in the rental accommodation market and rental rates above the levels experienced in 1996 and 1997. This will likely place additional demands on the rental subsidization program administered by the Fort McMurray Housing Authority. Using the current ratio of subsidized units to total population as a benchmark, an additional 70 units may be required in the rental subsidy program by 2006. This demand for subsidized housing will moderate by about 20 units as the construction phase is over and the population shrinks. These increases should be placed in the context of the 55 units that were added to the rent subsidy program over the past year.

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<sup>10</sup> The Urban Population Impact Model is not constrained by the housing needs of all workers, for whom a camp is not available, and their families requiring accommodation in the urban service area. Insofar as this assumption does not hold, it is likely that the population increase will be slower than shown by the urban population impact model and that some jobs, especially induced jobs, will remain vacant, leading to reduced service levels.

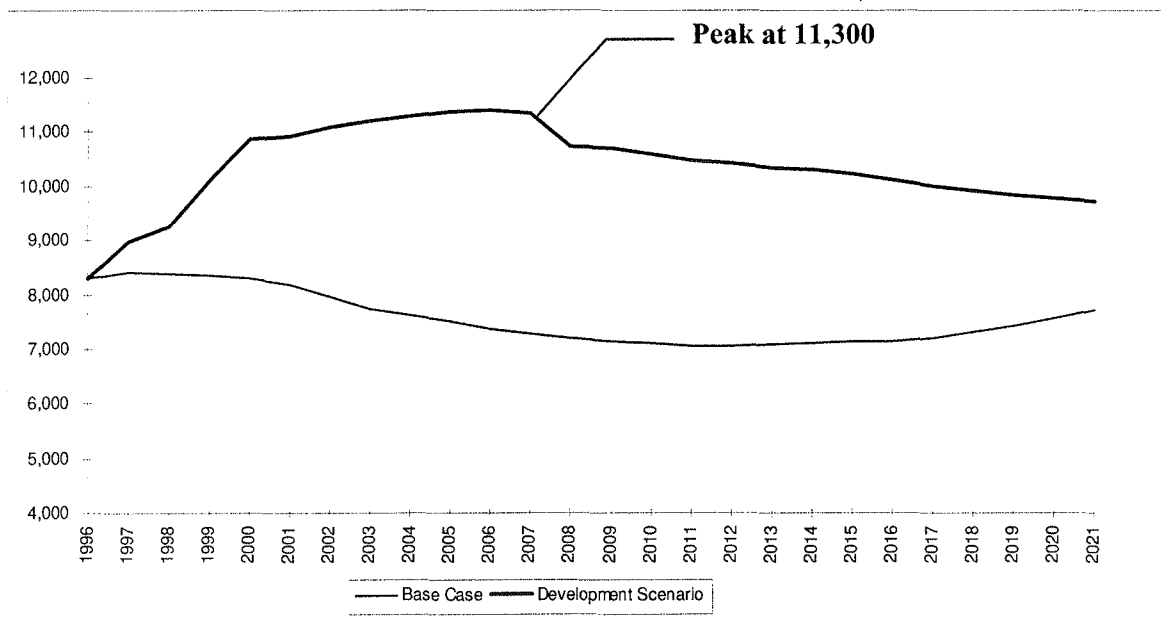


## Education

Figure 6-2 presents a graph of the estimated school-aged population over time under this scenario. The graph shows that the number of school-aged children is expected to increase significantly from the 1996 estimate of 8,300 to 11,000 in 2002 and 11,300 in 2005. This increase of 2,700-3,000 children in the relevant age category represents a 30%-35% increase over eight years. This level of increase in school-aged children translates roughly to 100-125 classroom teachers and associated facilities.

The timing, not the magnitude, of the impact of the population increase under this scenario is sensitive to the age and family profile of the new workers attracted to the region. Discussion with representatives of Alberta Advanced Education and Career Development suggest that the new workers will be between 25 and 40 years old, with a bias towards the 30-40 year age groups. This profile, which is incorporated into the urban population impact model, means that many new families will likely have school-aged children, causing an immediate impact on the school systems. If most of the workers attracted to the area are in their early twenties, the impact on the school system would be delayed by five to ten years.

**Figure 6-2 School-Aged Population Projection, Urban Service Area  
Base Case and Regional Development Scenario**



**Note:** Base case includes existing oil sands plant, plus Steepbank Mine and Aurora North Mine  
Development scenario includes Muskeg River Mine, Mobil Kearn Oil Sands Mine, Suncor's Millennium Project, Syncrude 21 suite of project, Gulf Surmont and some smaller in situ projects.

With respect to post-secondary education, the Regional Development Scenario expands the number and range of jobs for which local area youths could prepare themselves. In addition, the range of oil sands industry projects broadens the market for contract training available to Keyano College and other institutions.

### ***Social Service Agencies***

A part of the impacts on social service agencies due to the population changes associated with the Regional Development Scenario are already being experienced. The estimated 14% population increase in 1997 as compared to 1996 relates to the positive outlook for the oil sands sector in general and anticipates a range of projects, both expansions of existing plants and new "grass roots" operations. Assuming the Regional Development Scenario, the population is expected to continue to increase at 6.5%

for the next five years, abating to a 1% growth rate for the five years following. The population growth will have further impacts on the demands for social services in the area.

For example, an average 2% of children between 0 and 14 years of age and 9% of adults have some level of disability. Using these provincial averages as a benchmark, an estimated 1,000 additional people with disabilities may require some level of assistance in the year 2006, when the population impact is at its maximum.

Several agencies anticipate a relatively linear relationship between population and service demands. For example, AADAC, the YMCA, and also counseling-related services can expect increases in demand of 20%-25%. Because the population increases are fuelled by new employment growth in the region, agencies, such as the Salvation Army and the Food Bank may not see a corresponding increase in demands in the long run. However, they are expected to feel the impacts during the near term as the construction phase of the range of projects attracts speculative workers to the region.

### ***Health Services***

Assuming the Regional Development Scenario, the total service population of the health region will likely increase by 2005 to 52,000, including the urban service area, the outlying communities, and construction camps. The camp population alone may peak out at 6,300 persons in the year 2000. Focusing only on the long-term stable population, the total service population of the health region may reach 49,000 in the 2016 to 2018 period, an increase of 7,000 persons or 17% over 1997.

Without adjusting the analysis to the demand for individual services, the anticipated population level of 49,000 persons will require 60-70 physicians to keep the number of persons per physician close to the provincial average of 700-800. This implies an increase of at least 30 physicians over and above the current complement of 32. The demand for medical services will be higher during the 1999-2005 construction period, as the population peaks.

### ***Emergency Services***

The anticipated increases in population will increase demands for emergency services. Already, the ambulance resources are reported to be stretched and service levels can be maintained only with difficulty and at the expense, for example, of training for new functions, such as airport emergency response. Generally the demand for emergency services can be expected to increase more than proportionally to the population. With a larger population, the chance that unexpected events will occur increase, and emergency services are expected to be prepared for this. Given the fact that the emergency response system in Wood Buffalo is relatively small in terms of ambulances and fire fighting equipment, additional demands can quickly cause situations in which all resources are committed, necessitating additional units.

In discussions, emergency services personnel have suggested that emergency service resources, including emergency medicine, may increase one and a half or two times as fast as the population.

### ***Highway Transportation***

By the time that all currently proposed projects are in operation, the number of direct jobs in the rural area north of Fort McMurray is expected to increase by approximately 2,700. This will increase the total number of vehicles on the highway north of the urban service area by an estimated 15% to 17% during the operations phases of the projects. The highway will see an increased use of as much as 35% in the year 2000, when a range of projects are in full construction. Much of this projected increase will conform roughly to the same use-profile that is currently in place, thus increasing the rush hour congestion.

### ***Other Infrastructure***

The population impact of the Regional Development Scenario will remain below the critical population level of 55,000 to 60,000, beyond which major municipal infrastructure expenditures are anticipated. This observation, notwithstanding, the range of projects included in the Regional Development Scenario does convey impacts on the municipality and some of these impacts are already being felt. Examples include a marked increase

in development permit applications for residential, commercial, and industrial construction.

#### **6.1.4 Municipal Fiscal Impacts**

Although this socio-economic assessment does not include a detailed municipal fiscal impact analysis, an initial and preliminary review of the fiscal impacts of the proposed projects suggest that they will lead to improvements in the fiscal situation of the municipality. The plants and mines are major contributors to the assessment base, while conveying relatively little cost to the municipality. This conclusion is critically dependent on the way the municipality wants to develop. Although still in a very early stage of discussion, some major infrastructure options are being considered that could have significant impacts on the fiscal position of the municipality. Examples include a bridge over the Clearwater River and opening up the area to the east of the Clearwater for development.

The Regional Development Scenario exacerbates the timing mismatch between the future tax income and current service demands. This is an area of concern and may constrain the municipality with respect to appropriate and timely reaction to the emerging service demands and issues.

#### **6.1.5 Cumulative Impacts, Outlying Communities**

Generally, the presence of the oil sands industry has been a major influence on the communities. Oil sands exploration and exploitation has opened up the region and brought all communities in direct and constant contact with the rest of Alberta. It has become harder for community members to live traditionally, while it has proven to be hard as well to connect with the wage economy. Over time, the communities are learning how to deal with the new realities. Some aboriginal groups and individuals have seized opportunities afforded by the oil sands industry and other developments. Examples include the Fort McKay Group of Companies, Mikisew Cree First Nation Economic Development, Neegan Development and others.

The new expansion phase of the oil sands industry will reinforce its position as the dominant economic driver in the region. The expansion will create employment and contracting opportunities, but also reduce further the opportunities for traditional pursuits, such as hunting, trapping, and gathering. The new mines and in situ projects will open up the area and disturb considerable tracts of land for 20 to 30 years. End land use plans include returning the area to its natural state or perhaps even optimizing the landscape for uses suggested by the communities. However, in the intervening period the traditional land uses will be compromised.

The impacts of the Regional Development Scenario on the different local and regional services are expected to be extensions of the impacts of the Shell Development Scenario, discussed in Section 5. They are summarized here briefly.

### ***Population***

The mining-based projects will take place north of the urban service area of Fort McMurray, affecting Fort McKay more than the other communities. The Gulf Surmont and JACOS Hangingstone projects will have more of an impact on the southern communities of Conklin, Anzac, Janvier, and Gregoire Lake. Individually and collectively, these projects will strengthen the economic base of the communities by increasing contracting and employment opportunities. This will make it possible for more community members to live in the communities and work in the region, thus providing an upward impetus to population levels. An improved regional transportation network will enhance this trend.

### ***Housing***

Housing demands in the communities are a derivative of the population numbers and are expected to increase over time. Even without further population growth induced by the oil sands industry expansion, housing will be an issue in terms of the need for housing stock quality improvements and of accommodating the generally young population.

### ***Education***

Education will need to remain a strong focus of these communities in order to allow community members to capitalize on employment and contracting opportunities afforded by oil sands industry expansion. Generally, the oil sands industry developers are supportive of individual and community-wide education initiatives and the increasing number of companies is expected to expand the training opportunities, such as summer student programs and scholarship funds. The presence of a strong economic base may be an incentive for young and adult community members to pursue post-secondary education.

### ***Social Service Agencies***

Most communities are learning to deal with the presence of oil sands development in their vicinity. Over time, stable employment and contracting opportunities may provide a basis for further community development. Meanwhile, demands on social service agencies can be expected to increase roughly commensurate with the increase in population.

### ***Health and Emergency Services***

The proliferation of oil sands projects throughout the Wood Buffalo region will bring basic medical services to areas that currently have none. Mutual aid agreements and possibly further integration of municipal and company-based emergency services is expected to increase the fire and ambulance coverage in most of the outlying communities.

After a period of adjustment, the oil sands industry expansion is expected to contribute positively to the fiscal health of the municipality. Subject to the political process, this means that the fiscal resources will be available to provide appropriate emergency service coverage.

Primary and secondary health care will remain located principally in the urban service area and will likely experience an increase in demand for a range of services, including emergency medicine, from the workers in construction camps. In total, as many as 6,300 camp workers are expected on an annual basis. Larger numbers of workers will be in the camp for short periods.

### ***Highway Transportation***

All major road links in the region are expected to have an increase in traffic volume during both the construction and operations phases of the oil sands projects. Much of the increased traffic volume will mirror the current road use, which is characterized by very busy rush hours in the morning and late afternoon. Oil sands industry developers and the Regional Municipality of Wood Buffalo, working cooperatively in the context of the Regional Infrastructure Working Group, have started to address traffic issues.

### ***Other Infrastructure***

The municipal infrastructure of many of the outlying communities — such as water, sewer, and solid waste systems — is in need of improvement, especially if additional population growth is experienced. Subject to the political process, the expected improvement over time in the fiscal situation of the municipality will mean that it will be better able to meet these needs than currently.

## 7 CONCLUSION

The Muskeg River Mine expands the oil sands industry in the region and strengthens the regional economy. It contributes to security of supply of oil feed stocks for Canadian refiners and an enhanced long-term outlook for the industry and thus the region. The project increases the contracting and employment opportunities in the region and brings new money into the region and the province. The population of the study area will increase as a result of the project.

The project will increase demands on the local and regional services and infrastructure. Most significantly, the project will contribute to the shortage of housing in the urban service area of Fort McMurray. Several design aspects of the projects, such as the use of a construction camp and scheduling deliveries to the site to coincide with the off-peak periods, will minimize the impact of the project on the region. These design attributes notwithstanding, the growth in the region will create challenges and Shell, in collaboration with the municipality, senior levels of government, and other oil sands developers has started to build the structures needed to face these challenges. The Athabasca Oil Sands Facilitation Committee is a case in point, as are other committees, such as the Regional Infrastructure Working Group.

Shell is only one of a number of proposed oil sands developments. These proposed projects will contribute to a population growth of 20 to 25% over current levels. This level, and the multi-project and multi-proponent nature of the growth, emphasize the need for cooperation and coordination, especially with respect to mitigation measures. Collaboration to meet the challenges posed by oil sands industry expansion will ensure that cumulatively this expansion is positive for the region and the province.

On balance, the socio-economic impact of the Muskeg River Mine is positive and the project is desirable from the perspective of the region, the province, and the country.

## GLOSSARY

Base case	Oil sands activity in the region is limited to the existing plants projects and the Steepbank Mine and the Aurora North Mine.
Direct jobs	Jobs that relate directly to the project. In case in which the project activity is executed by a contractor, the contractor jobs are counted as direct jobs.
Indirect jobs	Jobs located with suppliers to the project. Examples include heavy equipment servicing and manufacture of equipment used by the project.
Induced jobs	Jobs in the general economy that are related to the spending by workers with direct and indirect jobs. Examples include service sector jobs, such as accountants and restaurant personnel.
Net Social Benefit	Financial flows to governments and project proponent resulting from the project. Undiscounted Net Social Benefits are the simple summation of these financial flows over time. Discounted NSB accounts for the fact that the financial flows accrue over time and that future income (tax income , royalties, and net returns to owners) is less valuable than current income.



## REFERENCES

- Alberta Alcohol and Drug Abuse Commission. 1996. Social and Health Indicators of Alcohol and Drug Abuse. Edmonton.
- Alberta Physician Resources Planning Group Report. 1997. Report to the Minister of Health.
- Alberta Treasury. 1996. Alberta Economic Multipliers. Edmonton
- Fort McKay Environmental Services Ltd. 1996. The Community of Fort McKay Traditional Uses of the Renewable Resources On the Proposed Syncrude Aurora Mine site Local Study Area. Report for Syncrude Canada Ltd. Fort McKay.
- Golder Associates. 1996. Impact Analysis of Socio-Economic Impacts Associated with the Steepbank Mine. Report for Suncor Inc., Calgary.
- Golder Associates. 1996. Socio-Economic Baseline Report for the Wood Buffalo Region. Report for Suncor. Inc. Calgary.
- Nichols Applied Management. 1996. Aurora Mine Project, Socio-Economic Impact Assessment. Report for Syncrude Canada Ltd. Edmonton
- Nichols Applied Management. 1997. Socio-Economic Baseline, Urban Service Area of Fort McMurray. Report for the Regional Infrastructure Working Group. Edmonton.
- Nichols Applied Management. 1997. Urban Service Area of Fort McMurray, Population Impact Model. Report for the Regional Infrastructure Working Group. Edmonton.
- Regional Municipality of Wood Buffalo. 1995. Fort McMurray General Municipal Plan 1995, Urban Service Area.
- Regional Municipality of Wood Buffalo. 1997. Fort McMurray Housing Strategies. Task Force Report.
- Statistics Canada. 1996 Census. Ottawa.
- Terry Langis Associates. 1997. Wood Buffalo Economic Adjustment Analysis. Report for Suncor Energy and Syncrude Canada Ltd. Fort McMurray.

Socio-Economic Baseline  
Urban Service Area of Fort McMurray

Prepared for

**Regional Infrastructure Working Group**

by

**Nichols Applied Management**  
**Economic and Management Consultants**  
**Edmonton** **Calgary**

October, 1997

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# 1 INTRODUCTION

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## 1.1 BACKGROUND

The oil sands industry is expanding. The Suncor Steepbank Mine project is well underway and the Syncrude Aurora Mine has received regulatory approval. Other projects, including the Shell Lease 13W, Mobil's Kearl Oil Sands Mine, and the Suncor Millennium projects have gone through the disclosure process, which starts the regulatory proceedings. Other projects may come forward.

The focus of the oil sands industry development is the Regional Municipality of Wood Buffalo. Most development is expected to take place in the Fort McKay area, just north of the urban service area of Fort McMurray. Some development may take place as well in the southern half of the municipality, closer to the smaller communities of Janvier and Conklin. Although the smaller communities in the municipality will no doubt be influenced by continued oil sands industry expansion, the major socio-economic impacts are expected to occur in the urban service area of Fort McMurray, the administrative and population centre of the region.

The new operational employment associated with oil sands development reverses a marginal decline over the past decade as continuous technological improvements allowed increased synthetic crude oil production without a corresponding increases in employment. The overall population of the region saw a corresponding marginal decline between 1986 and 1996.

A current optimism about future oil sands development and the construction and operations-related employment has spurred a marked increase in residential and commercial building in the urban services area of Fort McMurray. There is evidence of an influx of persons into the region to fill existing and anticipated jobs in the region.

The rapidly evolving situation in the region provides challenges to municipal and other service providers. What are the impacts of the current and future projects in terms of population? And what impact does the population growth have on services. What measures can be undertaken to amplify the positive impacts (such as employment and

income growth) and mitigate the negative ones (such as stress on the local housing market).

To address some of these questions and to provide regional service providers with a comprehensive oil sands industry outlook, the Regional Infrastructure Working Group, a collaboration between oil sands industry firms and the Regional Municipality of Wood Buffalo, commissioned Nichols Applied Management to conduct a socio-economic baseline study and implement a population projection model. This document contains the baseline part of this study. The population forecast model is provided under separate cover.

## **1.2 WHAT IS A SOCIO-ECONOMIC BASELINE**

A socio-economic baseline provides a description of the human environment. It covers a range of variables including:

- human services, such as health, education, protective services (police, fire, ambulance), and social services; and
- physical infrastructure, such as land, air, and water transportation, housing, and municipal services (water, sewer, solid waste).

Baseline studies are largely descriptive in nature in that they document the environment on which projects are imposed. Their use lies in documenting the socio-economic situation without new development, thus allowing for an assessment of the changes brought on by the project(s).

## **1.3 WHAT IS DIFFERENT ABOUT THIS BASELINE?**

Historically, baseline studies have been conducted as part of the regulatory approval process of projects. In the oil sands industry context, they were conducted relatively infrequently as new, often very large, projects came forward. Again historically, baseline studies have been paper-based reports, providing a static snap-shot of the socio-economic situation.

As the oil sands industry development shifts from stand-alone mega-projects (such as Suncor and Syncrude) to a regional multi-project, multi-proponent model, the dynamics of the region change as well.

Change is occurring as several different proponents come forward with projects of different size and complexity and with different time lines. Thus, the socio-economic conditions are very much in flux, necessitating frequent updates on the baseline, which describes those conditions.

This socio-economic baseline is a hybrid between a text document and a data base and has the following characteristics:

- it present the information in summary and point-form manner rather than in a narrative format; and
- it is executed in Microsoft Excel to allow for easier updates and integration with the population impact model described above.

The basic design of the baseline makes it well suited for a user who wants to have access to information on specific items or issues. It does not make good cover-to-cover reading.

#### **1.4 SCOPE**

The baseline focuses on the urban service area of Fort McMurray, which is expected to be the focal point for socio-economic impacts. This scope coincides with that of the companion population impact model.

The outlying communities and, generally, the rural area of the Municipality will be the subject of separate baseline and impact work conducted by the communities themselves. This recognizes the uniqueness of the aboriginal communities and the special relationship that oil sands companies have or are establishing with them.

#### **1.5 METHODOLOGY**

Interviews with local area respondents are the key input to the baseline. The study team interviewed a broad range persons, both in-person and by telephone, to gather a range of information, including:

- a description of programs and services provided;
- an indication of the resources available to provide these services and programs;
- key indicators that capture their activities: and
- current and emerging issues.

Information gathered through interviews was augmented by published materials, including the 1996 Statistics Canada census, which is being released in a phased manner in 1997 and 1998.

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## 2 SUMMARY OF ISSUES

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Although the baseline report focuses on the description of the human environment in the urban service area of Fort McMurray, it documents as well issues that service providers flag. Discussions with service providers indicate a high level of awareness of the proposed oil sands projects and many are already noticing some impacts although most of the proposed projects have not yet started. Following is a short summary of issues raised by service providers:

- project announcements lack of specific information on project schedules, workforce requirements (number and skills), local vs. non-local participation and create unrealistic expectations in job seekers;
- project announcement induce an influx of individuals, including persons with low skills and few resources seeking employment opportunities in the region;
- additional service requirements associated with this influx clash with internal budgetary constraints and the time required to receive approval for increased budgets (if available);
- there is an ongoing difficulty of attracting professionals in the “helping” professions to Fort McMurray;
- the limited resources within each organization places additional emphasis on integration between service agencies;
- the shortage of housing, particularly affordable housing, due to high demand for accommodation (rent or own):
  - causes additional service demands on social service agencies as more of individual families' resources are devoted to housing and family tensions may increase as more persons occupy a dwelling;



- makes recruiting of persons harder, especially for jobs in the service and non-governmental social service sector;
  - effects tourism as fixed roof and campground accommodation is occupied by individuals other than tourists.
- most of the increased consumer spending is focused in Fort McMurray, increasing the disparity between the rural and urban service area of the municipality;

Many service providers place emphasis on how issues are interrelated. For example, a lack of affordable housing may result in increased demands on services such as shelter housing and AADAC, which in turn may have an impact on the health and justice systems. Another example is the relationship between the high level of activity in the economy and the reduced availability of people to volunteer, while at the same time, agencies that rely on volunteers experience an increase in demands for their services.

In general terms, social services agencies are currently capable of handling the demand on their services, but many are stretched in terms of budgets and human resources. Many respondents discuss the need for more partnerships between agencies to make the limited resources go further.

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## **3 DATA BASE MANUAL**

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### **3.1 DATA BASE ORGANIZATION**

The baseline information is captured in an Excel workbook, in which each individual sheet or page contains information on a specific organization or issue area. Each Sheet contains the following information:<sup>1</sup>

- name of organization/identification of issue area;
- a brief description of the resources available to the organization or the infrastructure pertaining to the issue area;
- key indicators;
- issues identified by service providers; and
- contact name, if applicable.

Three sheets are configured differently. The first sheet contains the table of content and the last two sheet provide detailed population information from the 1996 census and the study teams estimate of the population in mid 1997. These latter sheets can be linked to the population impact model -- the companion study to the baseline -- to ensure that the model incorporates the most up-to-date population information.

### **3.2 USING THE DATA BASE**

The functionality of Microsoft Excel determines how to get around in the database. Users with any experience in Excel will have no trouble to navigate around in the workbook. The major ways to get around are:

- a mouse click on the worksheet tabs at the bottom of the screen provides access to that particular sheet:

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<sup>1</sup> In more technical terms, the baseline information is contained in a file entitled "BASELINE.XLS, containing 29 sheets. All information is contained in the first three columns and 29 rows of each sheet. Each subsection (name, resources, key indicators, etc.) is located on the same row in each of the sheets. Any rows not used is hidden from view.

- a mouse click on the arrows on the very bottom left hand side of the screen allows for scrolling of all worksheet tabs;
- PageUp and Page Down keys scroll through the information that does not fit on screen within each sheet;
- within each sheet, pressing the Home key brings up the first line of the information.

The table on content, which is contained in the first sheet, has been equipped with buttons. Clicking on any one of these buttons will bring the associated sheet to the screen.

With respect to printing, again the functionality of Excel determines the approach. If information on a separate sheet needs to be printed, follow the following procedure:

- go to the sheet that needs to be printed;
- click on File, Print:
- in the Print dialog box, click on Page Setup:
- in the Page Setup dialog box, set orientation to Landscape and scaling to 100%:
- click on OK in the Page Setup and the Print Dialog Box.

A full printout of the database is presented in the next section.

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## 4 BASELINE DATA BASE

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### BASELINE INFORMATION TABLE OF CONTENT

<b>Human Services</b>	<b>Physical Infra Structure</b>
Social Services;	Housing
Family and Community Support Services	Municipal Services
Family and Social Services	Water and Sewer
Food Bank	Power/Natural Gas
Family Crisis Centre	Transportation
Salvation Army	Air
AADAC	Water
Community Services	Land
Golden Years Society	Telecommunication
Housing	Land Use
Community Housing	Regional Economy
Education	Population 1996
K-12	Population 1997
Post Secondary	
Health Services	
Northern Lights Regional Health Services	
Emergency Services	
Police	
Fire Ambulance	
Labour Market/Business Services	
Human Resources Development Canada	
Advanced Education & Career Development	
Northeastern Aboriginal Business	
Association	
Regional Business Development Centre	
Visitors Bureau	

Organization	<b>Municipality of Wood Buffalo - Community Services: Family and Community Support Services</b>
Program/Service	<ul style="list-style-type: none"> <li>• Personal and family counselling services to residents of the Municipality.</li> <li>• Employee &amp; Family Assistance Program (EFAP) to municipal workers and their families, external EFAP services on contract locally and out of the province.</li> <li>• Provision of assistance for seniors and seniors' care givers, including Meals on Wheels, Seniors' Outreach Program.</li> <li>• Resource and referral services for physicians, 'other EFAP programs and community agencies.</li> <li>• critical incident stress intervention services; and public education.</li> </ul>
Resources	<ul style="list-style-type: none"> <li>• One team leader/counsellor, one part-time senior family counsellor, three family counsellors (one full-time and</li> <li>• Some programs and services have a significant volunteer input.</li> <li>• FCSS is a division of the Community Services Department of the Regional Municipality of Wood Buffalo; the other two divisions are Parks and Recreation and Community Development.</li> </ul>
Key Indicator(s)	<ul style="list-style-type: none"> <li>• Individual counsellor caseloads is high sometimes exceeding a full case load of 30-35 families</li> <li>• New cases (1996 January though July): 167</li> <li>• New cases (1997 January though July): 179</li> </ul>
Issues	<ul style="list-style-type: none"> <li>• FCSS is getting more referrals from other agencies and the client base is increasing. Figures for the first half of 1997 indicate a 7% increase in new cases compared to the same time in 1996.</li> <li>• Face-to-face client/counsellor contact increased by 165 between 1995 and 1996 (the increase over the two-year period between 1994 and 1996 was 405. The increase in new clients between 1995 and 1996 was approximately 3%.</li> <li>• Fort McMurray has lost three psychologists in the last 3 months, putting added pressure on the community's other counselling resources, including FCSS.</li> <li>• Employee and Family Assistance program is increasingly been used probably because of greater awareness on the part of municipal employees.</li> <li>• Role of FCSS has expanded; More training workshops are offered and service area has expanded to include the rural areas since the municipal amalgamation.</li> </ul>
Contact Name	Jacqueline Twining (Family Counsellor); Kathy Anderson (Family Counsellor)

## Social Services

Organization	<b>Alberta Family and Social Services</b>
Program/Service	<ul style="list-style-type: none"><li>• Child welfare, including the investigation and handling of child abuse and neglect cases.</li><li>• Foster care, permanent wards and adoption services.</li><li>• Administration and caseload management of Social Assistance program.</li><li>• Coordination of services for persons with disabilities.</li><li>• Administration of family maintenance agreements.</li><li>• Administration and management of the Jobs Corps program.</li></ul>
Resources	
Key Indicator(s)	<ul style="list-style-type: none"><li>• Caseload (1996/97): 600</li><li>Employed (insufficient earnings): 19%</li><li>Available for work (require intervention): 23%</li><li>Unavailable for work (temporary): 21%</li><li>Unable to work (permanent disability): 12%</li><li>Assured Income for Severely Handicapped: 25%</li></ul>
Issues	<ul style="list-style-type: none"><li>• Welfare caseload has decreased over the past five years, but caseloads have increased over the last six months.</li><li>• Shortage of housing and overcrowding are problems that are reflected in caseloads.</li><li>• Some welfare recipients have moved to students financing.</li><li>Need for work experience placement programs. Oil sands companies could become more active in this area.</li><li>•</li><li>• Social housing needs are critical in the community.</li><li>• Lack of visible involvement by the Municipality concerning social needs.</li></ul>
Contact Name	Lori Cooper (Assistant Manager) & Susan Shave (Employment Services and job Corps Supervisor)

## Food Bank

Organization	<b>Fort McMurray Food Bank Association</b>
Program/Service	<ul style="list-style-type: none"><li>• Short-term food relief through food hampers.</li><li>• In cooperation with other community organizations, it delivers a new educational program called GAPS (Grocery Awareness Program Services) focusing on choice, personal responsibility, and maximizing the nutritional value of food choices.</li></ul>
Resources	<ul style="list-style-type: none"><li>• Core staff of 4-5 in addition to a pool of approximately 75 to 80 volunteers.</li><li>• Its annual budget is approximately \$200,000, funded in part by the United Way; extensive reliance on individual donations.</li></ul>
Key Indicator(s)	
Issues	<ul style="list-style-type: none"><li>• Number of first time users is on the rise.</li><li>• Increasing rent and house prices is reducing the resources low income individuals and families have available for food purchases.</li><li>• Project announcements have been vague and do not state clearly the type of jobs available and skills required to work on these projects.</li><li>• Many individuals with limited skills and no resources arrive in Fort McMurray, seeking jobs which are not available. An estimated 40%-50% of clients have no real marketable skills.</li><li>• Demand for Food Bank services is expected to increase from persons and families with low incomes, who may face higher living costs in the community as the oil sands projects come on stream.</li></ul>
Contact Name	Larry Henry (president) & Jeannine Colley (Executive Director)

## Family Crisis Centre

Organization	<b>Fort McMurray Family Crisis Centre</b>
Program/Service	<p>Services to women and children in crisis including:</p> <ul style="list-style-type: none"><li>• Unity House shelter program (temporary housing, food, and clothing for up to 21 days );</li><li>• Sexual assault program; "Adults molested as children" group program;</li><li>• Public education</li><li>• SHARE group for social interaction, friendship, and mutual support;</li><li>• Other non-residential services (Men's program, Family Violence Group; and</li><li>• Follow-up program.</li></ul>
Resources	<ul style="list-style-type: none"><li>• 15 staff + approximately 120 volunteers</li><li>• Shelter with 21 beds (15 of which are funded, the balance are added to meet demand).</li><li>• Funded in part by the United Way.</li></ul>
Key Indicator(s)	<p>Number of clients served (August 1996-July 1997):</p> <ul style="list-style-type: none"><li>• Shelter program: 646</li><li>• Sexual assault program: 214</li><li>• Public education program: 2577</li><li>• SHARE group: 418</li></ul>
Issues	<ul style="list-style-type: none"><li>• Wide range of clients, with approximately 65% consisting of low-income aboriginal women, most with children under 12.</li><li>• An increasing number of calls and shelter clients reveal multiple not single issues, including homelessness, mental health problems, loneliness, lack of extended family, and family violence.</li><li>• Difficulty to recruit and retain staff related to the comparatively low wages and benefits and the high levels of stress associated with working in the non-governmental social service sector.</li><li>• Difficulty to raise funds in view of the increased competition for charitable contributions.</li><li>• Difficulty to attract health care professionals (physicians, psychologists) to Fort McMurray places additional demands on community agencies to provide services and reduces their ability to refer clients.</li><li>• Resources are stretched with the current demand for services, which is expected to increase as population increases.</li></ul>
Contact Name	Lauri Antonichuk, Executive Director



## Salvation Army

Organization	<b>Fort McMurray Salvation Army</b>
Program/Service	<ul style="list-style-type: none"><li>• Shelter for the homeless;</li><li>• Thrift store</li><li>• START program for mentally handicapped individuals, which focuses on parent education &amp; support, workshops, community access training, independent living support, job training support, respite care, funding information, and behaviour management</li><li>• The Salvation Army works closely with other service agencies in the community.</li></ul>
Resources	<ul style="list-style-type: none"><li>• Staff of 36.</li><li>• Thrift store facility.</li><li>• New emergency shelter has overnight shelter capacity for 32 persons.</li></ul>
Key Indicator(s)	<ul style="list-style-type: none"><li>• In 1996, food, emergency accommodation, and transportation assistance was provided to 315 persons (127 adults with 149 children) and 39 single persons.</li><li>• Christmas assistance packages were provided to 53 families.</li><li>• Old shelter with 24 beds was virtually always full.</li></ul>
Issues	<ul style="list-style-type: none"><li>• Client base is very wide, especially at the Thrift Store.</li><li>• The organization does not receive block funding from the province to provide specific services. Rather it relies on funding that is directly related to the individual or family that receives the service.</li><li>• Unskilled individuals with no resources are the segment of population most likely requiring assistance from social and community agencies; There are indications that there is an influx of such persons into the community.</li><li>• Availability of interim assistance (i.e. before employment is found or social assistance is received) is a concern. Need for a single entry point for individuals with social and financial difficulties to simplify access to services.</li><li>• Need to know the specific workforce requirements for the various projects announced. This will help identify potential housing needs.</li></ul>
Contact Name	Iris Pasareno & Bonnie Misseghers

## AADAC

Organization	<b>Alberta Alcohol and Drug Abuse Commission</b>
Program/Service	<ul style="list-style-type: none"><li>• Drug, alcohol, and problem gaming counselling to adolescent and adults.</li><li>• Detox centre, funded by AADAC (90%) and the United Way (10%).</li><li>• Public education and awareness program.</li></ul>
Resources	<ul style="list-style-type: none"><li>• Approximate budget for Regional Office: \$170,000.</li></ul>
Key Indicator(s)	<p>Rate of Admission to AADAC or agencies funded by AADAC:</p> <ul style="list-style-type: none"><li>• Adult clients per 1,000 persons 18 years and over: 32.69</li><li>• Adolescent clients per 1,000 persons between 12 and 18: 18.57</li><li>• No of liquor stores per 1,000 persons 25 years and over: 0.43 (provincial average: 0.27)</li></ul>
Issues	<ul style="list-style-type: none"><li>• Intake of regional office is up by 30% over the previous year.</li><li>• Increase in population, increasing difference in income levels in the community, and increased number of persons per dwelling all increase the likelihood of drug and alcohol abuse, leading to increased client load for AADAC.</li><li>• Addiction touches upon many areas (health, social services, justice) stressing the need for inter-agency cooperation.</li><li>• Need for educational intervention at an increasingly early age; AADAC involved with collaborative effort to introduce appropriate curriculum materials for grades 4-6.</li></ul>
Contact Name	George McBeth, Area Supervisor

## Community Services

Organization	<b>Municipality of Wood Buffalo -- Community Services Department: Parks and Recreation and Community Development</b>
Program/Service	<ul style="list-style-type: none"><li>• Parks and Recreation operates, maintains, and provides programming for a number of municipally-owned facilities, including the pool, playgrounds, tennis courts, and park areas.</li><li>• Community Development works with private-sector contractors and community group to provide a range of services including running the three arenas.</li></ul>
Resources	<ul style="list-style-type: none"><li>• Parks and Recreation: approximately 25 full-time equivalent positions (FTE)</li><li>• Community Development: 6 full-time equivalent positions</li></ul>
Key Indicator(s)	<ul style="list-style-type: none"><li>• Number of partnership agreements: 16</li><li>• Number of contractual relationships: 17</li></ul>
Issues	<ul style="list-style-type: none"><li>• Increased enrollment in some programs (e.g. youth soccer, adult slowpitch) is putting a strain on available facilities.</li><li>• Need for increased security at recreational and sports facilities to combat vandalism.</li><li>• Shifting demographics may change the type of recreational facilities that are demanded by the community.</li><li>• Community Services relies heavily on volunteers, which does not increase at the same rate as the population. It is the stable, long-term population that provides the volunteer base.</li><li>• Volunteerism is expected to decline relative to total population as more temporary and short-term residents enter the region.</li></ul>
Contact Name	Ms. Bev Fedoruk, Ms. Kim Howell

## Golden Years

Organization	<b>Golden years Society</b>
Program/Service	<ul style="list-style-type: none"><li>• Range of services to seniors residing in the Municipality of Wood Buffalo, including transportation</li></ul>
Resources	<ul style="list-style-type: none"><li>• One executive director; society relies extensively on approximately 60-70 volunteers.</li><li>• Society has a 15-passenger seat van. The Municipality operates two handi-buses, 65 and over travel free.</li></ul>
Key Indicator(s)	<ul style="list-style-type: none"><li>• Current membership is approximately 200, 40 of which are over 80 while the rest are between 50 and 80 years old.</li></ul>
Issues	<ul style="list-style-type: none"><li>• Shortage of affordable housing for seniors in the community: current rental situation is critical for seniors on fixed incomes.</li><li>• There are no intermediate facilities (e.g. seniors' lodge); Plans to build a 40 unit lodge are in early stages of development</li><li>• Increasing number of seniors are staying in or are moving back to the city to be close to their children. However, a high proportion of seniors do not have extended family support.</li></ul>
Contact Name	Sylvia Avery (Executive Director)

## Community Housing

Organization	<b>The Fort McMurray Housing Coalition:</b> an inter-agency group that focuses on housing issues. Participants in the Coalition include: The Fort McMurray Housing Authority, Alberta Municipal Affairs, Municipality of Wood Buffalo and others.
Program/Service	<ul style="list-style-type: none"><li>• The Fort McMurray Housing Authority manages housing units and administers a rent supplement program to assist household in need to obtain suitable and affordable housing.</li><li>• The Metis/Urban Housing provides affordable housing for to Metis and First Nations persons in Fort McMurray.</li><li>• Unity House and the Salvation Army provide emergency shelter on a short term basis.</li></ul>
Resources	<ul style="list-style-type: none"><li>• The Fort McMurray Housing Authority has a volunteer board and 4.5 paid staff members</li><li>• The Landlord and Tenant Advisory Board has one paid staff member.</li><li>• The Fort McMurray Housing Strategies Task Force -- a volunteer ad hoc group -- prepared a housing strategies report for the Regional Municipality of Wood Buffalo in early 1997.</li></ul>
Key Indicator(s)	<ul style="list-style-type: none"><li>• The Fort McMurray Housing Authority has 181 housing units under direct management; all, except 4 self-contained seniors units, are located in Fort McMurray.</li><li>• The Rent Supplement Program has 126 private sector rental units owned by 12 different landlords.</li><li>• Metis/Urban Housing administers 21 units in Fort McMurray.</li><li>• Waiting list for Housing Authority housing is approximately 120 families.</li></ul>
Issues	<ul style="list-style-type: none"><li>• Increasing rents and decreasing vacancies in the rental market makes it difficult for low income families to obtain suitable accommodation.</li><li>• There is no single agency with the exclusive mandate for housing for low income persons. Housing issues cross many agency boundaries, making inter-agency cooperation essential.</li><li>• Need to educate the community at large particularly in the area of social housing needs. 'Need to market the rent supplement program to landlords, partnership approach required.</li></ul>
Contact Name	Glenda Adams

## K-12 Education

Organization	<b>Fort McMurray School District; Fort McMurray Roman Catholic Separate School District</b>
Program/Service	<ul style="list-style-type: none"> <li>• Elementary and secondary education.</li> <li>• Both systems provide French Immersion and French as a second language programming.</li> <li>• The Public School Board cooperates with the Francophone Coordinating Committee to provide a french school;</li> <li>• The Catholic school system includes a charter school.</li> <li>• There is one small Christian private school.</li> </ul>
Resources	<ul style="list-style-type: none"> <li>• Fort McMurray School District: 11 schools; 225 professional and 150 support staff</li> <li>• Fort McMurray Roman Catholic Separate School District: 8 schools ; 189 administrative and instructional staff and 75 support staff.</li> </ul>
Key Indicator(s)	<ul style="list-style-type: none"> <li>• Fort McMurray Public School enrollment (Sept. 1996): 4,542</li> <li>• Fort McMurray Public School enrollment (mid September 1997): 4,746</li> <li>• Fort McMurray Catholic School enrollment (Sept. 1996): 3,659</li> <li>• Fort McMurray Catholic School enrollment (mid September 1997): 3,679</li> </ul>
Issues	<ul style="list-style-type: none"> <li>• Some schools, especially in the down town area are experiencing greater student turnover than in the past. An estimated 25% of the student population in one downtown school changed as the 1996/97 school year progressed.</li> <li>• Qualified staff are becoming increasingly hard to recruit, especially in specialty areas -- music, science, guidance counsellors -- for the higher grades. Recruitment issues may become more pronounced as a number of current staff reach retirement age.</li> <li>• Fort McMurray school authorities experienced a roughly one-third decline in revenues as part of the shift from local to province-wide education financing.</li> <li>• The current funding formula does not reflect the higher cost of living in Wood Buffalo as compared to the rest of the province.</li> <li>• Fort McMurray School District has 1 school buildings in excess of current needs. Facilities are likely sufficient for expected enrollment through 2000. However, some busing may be needed, especially at the high school level.</li> <li>• Fort McMurray Catholic School has recently expanded their high school, freeing up space that was used by high school students in other schools. There will likely be a need for additional facilities (e.g. portables) in the Timberlea school in 1999.</li> </ul>
Contact Name	<p>Fort McMurray School District; Mr. Marv Tkachuk, Superintendent of Schools.</p> <p>Fort McMurray Roman Catholic Separate School District: Mr. Dan McIssaac, Superintendent</p>

## Post Secondary Education

Organization	<b>Keyano College</b>
Program/Service	<ul style="list-style-type: none"><li>• Academic upgrading.</li><li>• Career certificate and diploma programs.</li><li>• Trades and technology programs.</li><li>• University studies, including some degree programs.</li><li>• Range of non-credit programs of both a employment and personal development nature.</li><li>• Customized training for employers.</li></ul>
Resources	<ul style="list-style-type: none"><li>• 325 full and part time employees</li><li>• Total budget (1996/97): \$22,500,000</li><li>• Operates three campuses: Clearwater and Mackenzie in Fort McMurray and one in Fort Chipewyan</li><li>• Athabasca University and other universities (U. of A., U. of C.) provide distance education services in the Wood Buffalo region. 'Athabasca University operates a satellite campus in Fort McMurray.</li></ul>
Key Indicator(s)	<ul style="list-style-type: none"><li>• 1995/96 enrollment: 2,407 full-time; 1,329 part-time; and 5,406 non credit students.</li><li>• 1996/97 enrollment: 2,507 full-time; 1,149 part-time; and 5,748 non-credit students.</li><li>• Economic impacts on northeastern Alberta: wages and benefits are estimated at \$15.5 million) and purchase of supplies and services at \$6.97 million.</li></ul>
Issues	<ul style="list-style-type: none"><li>• High demand for trades (particularly in heavy equipment) and business/computer training.</li><li>• Anticipated increase in 1997/98 enrollment: 5% (on full-time equivalency basis).</li><li>• Increasing number of female students.</li><li>• College needs specific information about the cumulative employment opportunities and corresponding skill development requirements in order to respond with appropriate programs.</li></ul>
Contact Name	Doug MacRae, President

## Health

Organization	<b>Northern Lights Regional Health Services</b>
Program/Service	<ul style="list-style-type: none"><li>• Community/Preventive health services</li><li>• Diagnostic and therapeutic services</li><li>• Acute care (on an emergency, in-patient, and out-patient basis)</li><li>• Continuing care</li><li>• Home Care (long and short term, including palliative care)</li></ul> For a detailed listing of programs/services, see below
Resources	<ul style="list-style-type: none"><li>• Modern 86-bed hospital with medical staff of 22 persons, covering all areas of specialization.</li><li>• Continuing Care Centre with 30 long-term bed and 1 respite bed.</li><li>• Total 1996/1997 budget (including capital): \$28.3 million.</li></ul>
Key Indicator(s)	<ul style="list-style-type: none"><li>• Emergency room visits (1995/96):33,780</li><li>• Emergency room visits (1996/97):39,200</li><li>• Total admissions (1995/96): 3,644</li><li>• Total admission (1996/97: 3,828</li></ul>
Issues	<ul style="list-style-type: none"><li>• Difficulty in recruiting and retaining qualified medical staff. Currently the medical staff of the Northern Lights Regional Health Services is short by an estimated 19 positions. The shortage is most acute in Family Medicine.</li><li>• Population-based funding is inappropriate for the NLRHC due to the dynamic nature of the population in the area. Existing population estimates, including the 1996 census, are not an accurate reflection of the current population.</li><li>• The NLRH receives relatively less per person (young population), although health delivery in the region is more expensive than elsewhere in the province (geographical isolation, % of population in small aboriginal communities)</li></ul>
Contact Name	Mr. Dalton Russell, Chief Executive Officer



## Police

Organization	<b>Royal Canadian Mounted Police</b>		
Program/Service	<ul style="list-style-type: none"> <li>• Crime prevention and investigation.</li> <li>• Next of kin notification.</li> <li>• Court services, including victim impact statements.</li> <li>• Highway patrol and municipal traffic enforcement.</li> <li>• Victim services, including family violence and sexual assault prevention.</li> </ul>		
Resources	<ul style="list-style-type: none"> <li>• 45 officers in the urban services areas; likely to be expanded to 52 by the end of 1997</li> <li>• 13 officers in the rural services area: additional funding for 4 positions has been requested.</li> <li>• 9 auxiliary constables (civilian volunteers), spending on average 160 hours each per year.</li> <li>• The Community Policing and Victim Services programs have two part-time positions and 30-35 volunteers. Total volunteer effort in 1996: 30,000 hours.</li> </ul>		
Key Indicator(s)		<b>1995</b>	<b>1996</b>
	Assault on persons:	985	1289
	Robbery	25	26
	Break and enter	377	485
	Motor vehicle theft	199	234
Issues	<ul style="list-style-type: none"> <li>• Project workforce requirements and timing of construction activities are not always related to the RCMP in advance of their occurrence. One month lead time should be the norm.</li> <li>• As compared to the 1st half of 1996, the incidence of crime has increased in the first half of 1997, ranging from assault (up 7%) to traffic violations (up 29%) and impaired driving charges (up 30%).</li> <li>• Property damage has remained relatively stable over the same time period.</li> <li>• Demands for police services precede the expected increases in property tax revenue as new projects come on stream, creating a financial challenge to the municipality.</li> </ul>		
Contact Name	Constable Nagel and Tracy Horvath (Community Policing/Victim Services)		

## Fire Department

Organization	<b>Fort McMurray Fire Department</b>
Program/Service	<ul style="list-style-type: none"><li>• Fire suppression including airport emergency response.</li><li>• Ground and air ambulance services.</li><li>• Safety code and fire inspections.</li><li>• Emergency 9-1-1 dispatching for police, fire, and ambulance services.</li></ul>
Resources	<ul style="list-style-type: none"><li>• Three fire halls in urban services area, plus an airport emergency response truck at the airport.</li><li>• 42 fire fighters , 29 of whom are also emergency medical technicians; 4 senior managers (Fire Chief, Deputy Fire Chief, Fire District Chief, and Chief Training Officer); 7 Emergency 9-1-1 dispatchers, 3 of whom are part-time; 4 office support staff.</li><li>• Emergency response agreements with Suncor and Syncrude.</li><li>• Volunteer fire department in Fort Chipewyan, Fort McKay, Saprae Creek, Anzac and Conklin.</li><li>• Total budget of \$5.5 million, of which \$4.9 million is supported by taxes.</li></ul>
Key Indicator(s)	<ul style="list-style-type: none"><li>• Total emergency calls (fire and ambulance) 1995: 2,230</li><li>• Total emergency calls (fire and ambulance) 1996: 2,544</li><li>• Total emergency calls (fire and ambulance) 1997 (Jan-Jul): 1,755</li></ul>
Issues	<ul style="list-style-type: none"><li>• Emergency call volumes are increasing, reflecting an increase in population and the social/health effects of an improved regional economy, such more "partying", and more overtime.</li><li>• Additional manpower demands are anticipated (8 additional fire fighter/EMTs, a Medical Services Officer, a Fire Safety Officer, and 1.5. additional support staff).</li><li>• Additional housing development in the Timberlea area may require expanding Fire Hall #3 or building a new fire hall.</li><li>• Ongoing difficulty to retain highly trained fire fighter/EMTs.</li></ul>
Contact Name	Harvey Marchand, Fire Chief

Organization	<b>Human Resources Development Canada</b>
Program/Service	<ul style="list-style-type: none"> <li>• Administration of the Employment Insurance and other income security programs.</li> <li>• Employment counselling and placement.</li> <li>• Labour market analysis.</li> </ul>
Resources	<ul style="list-style-type: none"> <li>• Total staff complement: 12</li> <li>• Number of counsellors: 3</li> <li>• Number of needs determination counsellors: 2</li> </ul>
Key Indicator(s)	<p>Unemployment rate: August 1997: 3.6%</p> <p>Number of job inquiries from across Canada has increased dramatically over the last year.</p>
Issues	<ul style="list-style-type: none"> <li>• Most of the services currently offered by the department will be handled by the provincial government by the end of 1997. The department will continue to provide labour market information.</li> <li>• Project announcements need to be more specific regarding the timing of projects and the number and skills of workers required to counter the unrealistic expectations of many individuals regarding work in the oil sands industry.</li> <li>• Generally high skill levels required for work at the oil sands plants, limiting the opportunities to place entry-level workers.</li> <li>• Labour market information gathered by the department is not specific to Fort McMurray or Wood Buffalo. It covers the whole northeastern part of the province from the NWT border down to Camrose.</li> </ul>
Contact Name	Darrel Monson, Acting Manager and Pat Browning

AE&CD

Organization	<b>Alberta Advanced Education and Career Development</b>
Program/Service	<ul style="list-style-type: none"><li>• Career counselling, including courses in resume preparation and job search methods.</li><li>• Short-term skills training programs.</li><li>• Administration of the Apprenticeship program.</li></ul>
Resources	<ul style="list-style-type: none"><li>• 2 career counsellors</li><li>• 2 apprenticeship consultants</li><li>• 1 manager</li><li>• administrative support.</li></ul>
Key Indicator(s)	<ul style="list-style-type: none"><li>• 85% increase in new apprenticeship applications over the past year.</li></ul>
Issues	<ul style="list-style-type: none"><li>• Resources stretched with the current work load.</li><li>• Federal programs with respect to human resources training are being transferred to the provinces.</li><li>• No plans to increase resources to meet Increased demand related to resource development; transfer of federal training programs to AE&amp;CD is expected to lead to increased efficiencies.</li><li>• Project announcements need to be more specific regarding the timing of projects and the number and skills of workers required to increase the ability of AE&amp;D to direct and train people for the job opportunities.</li></ul>
Contact Name	Dan Szoo, Area Manager

## NAABA

Organization	<b>Northeastern Alberta Aboriginal Business Association</b>
Program/Service	<ul style="list-style-type: none"><li>• Promotion of aboriginal businesses.</li><li>• Facilitation of training and employment placement for aboriginal persons.</li></ul>
Resources	<ul style="list-style-type: none"><li>• Executive Director and administrative support.</li></ul>
Key Indicator(s)	<ul style="list-style-type: none"><li>• Member companies employ more than 500 people.</li><li>• On average, 1/4 to 1/3 of member companies workforce are of aboriginal ancestry. The workforce of some companies is close to 80% aboriginal.</li></ul>
Issues	<ul style="list-style-type: none"><li>• Need for early communication (start of project planning process) between the association and the oil sands companies, allowing member companies to identify business opportunities and sufficient time to prepare bids.</li><li>• Would like to receive bidding package at the same time as other organizations in the region.</li><li>• Business and employment opportunities created by the oil sands companies should focus on local resources.</li><li>• 13% Aboriginal employment is an appropriate target for oil sands companies to achieve. Syncrude is meeting the goal while Suncor is trying. Other proponents should endorse the 13% target.</li></ul>
Contact Name	Rose Bilou, executive director and Doug Goloski.

## Business Development Centre

Organization	<b>Regional Business Development Centre (a program of Western Diversification)</b>
Program/Service	<ul style="list-style-type: none"><li>• Personal counselling services to residents of the Municipality, Employee &amp; Family Assistance Program (EFAP) to</li><li>• Business library in support of small business development.</li><li>• Ad hoc initiatives in support of small business development; current involvement includes housing and doctor recruitment.</li></ul>
Resources	<ul style="list-style-type: none"><li>• Total number of employees: 9</li><li>• Loan fund of \$3 million. (maximum loan amount is \$70,000, average outstanding loan is \$37,000)</li></ul>
Key Indicator(s)	<ul style="list-style-type: none"><li>• Number of loan applications: First Quarter 1997: 8</li><li>• Outstanding loan amount: \$2 million.</li></ul>
Issues	<ul style="list-style-type: none"><li>• Number of loan inquiries up substantially over the past year.</li><li>• Quality of proposals is up, which is providing the Business Development Centre with the opportunity to build a quality loan portfolio.</li><li>• Resources of the Regional Business Development Centre are becoming overloaded; there may be a need for additional loan officers.</li></ul>
Contact Name	Mr. Bryan Bailey, Executive Director

## Visitors Bureau

Organization	<b>Fort McMurray Visitors' Bureau</b>
Program/Service	<ul style="list-style-type: none"><li>• Marketing and promotion of local and regional tourism amenities.</li><li>• Provision of tourism information.</li><li>• Production of a community directory.</li><li>• Organization of two annual trade shows.</li></ul>
Resources	<ul style="list-style-type: none"><li>• Member-based organization with annual budget of about \$100,000.</li><li>• Staff include an Executive Director and seasonal tourist information personnel.</li><li>• Port of Entry" visitor centre.</li></ul>
Key Indicator(s)	<ul style="list-style-type: none"><li>• 1996 Visitor Bureau statistics: Number of information requests: 530 Number of Guest Book entrees: 412 Number of bus tours: 675</li><li>• Trade show attendance is in excess of 25,000 persons.</li></ul>
Issues	<ul style="list-style-type: none"><li>• Use of local campgrounds by non-tourists (i.e. people waiting for fixed roof accommodation in the City) limits the ability of the Visitors' Bureau to expand the tourism industry in the area.</li><li>• Increased traffic on Highway 63 and particularly the increased number of oversized and heavy loads increases the barriers to road-based tourism traffic.</li><li>• Need to upgrade tourist facilities particularly campgrounds.</li><li>• Several local motels and hotels have begun -- or have recently completed -- major renovations, which may alleviate the situation of very low vacancy rates in fixed roof accommodation, which is a barrier to further expansion of the tourism industry..</li></ul>
Contact Name	Angele Dobie, Executive Director

## Housing

Issue Area	<b>Housing</b>
Description	<ul style="list-style-type: none"><li>• Provision of single and multi-family housing by private sector developers.</li></ul>
Resources	<ul style="list-style-type: none"><li>• In early 1996, the urban service area of Fort McMurray had 11,382 occupied and 585 unoccupied dwellings. An estimated 63% consists of single family houses, 23% apartments, and 14% mobile homes.</li><li>• Sapræ Creek is a rural residential subdivision in close proximity to the urban services area of Fort McMurray.</li></ul>
Key Indicator(s)	<ul style="list-style-type: none"><li>• Housing starts:</li><li>• 1997 (to mid August): 306, including 50 starts in Sapræ Creek</li><li>• 1996: 106</li><li>• 1995: 22</li></ul>
Issues	<ul style="list-style-type: none"><li>• Development is currently focused on single family dwellings. There is little or no activity with respect to multi-family dwellings.</li><li>• Fort McMurray has become one of the most expensive real estate markets in the province, with the average house prices in excess of \$150,000.</li><li>• The rental market is experiencing near zero vacancy rates, and there is upward pressure on the rental rates.</li><li>• There are concerns regarding the ability to obtain additional land for development in view of the fact that most land outside the urban service area of Fort McMurray is crown land.</li><li>• Some question of the ability of private sector to develop large tracts of land for housing beyond the land already developed with all or just deep services.</li></ul>
Contact Name	Greg Walsh, President, Fort McMurray Real Estate Board.



## Water and Sewer

Issue Area	<b>Municipal Services</b>
Description	<ul style="list-style-type: none"><li>• Water treatment and distribution</li><li>• Sewage collection and treatment</li><li>• Solid waste collection and disposal.</li></ul>
Resources	<ul style="list-style-type: none"><li>• Relatively new water treatment plant in Fort McMurray with capacity for about 60,000 persons.</li><li>• Sewage plant is capable of handling a population of around 55,000.</li><li>• Landfill site nearing capacity.</li></ul>
Key Indicator(s)	<ul style="list-style-type: none"><li>• Municipal water production (ML) 1996: 5,100 1995: 4,673 1994: 5,035</li></ul>
Issues	<ul style="list-style-type: none"><li>• A new water supply line and booster system may be required in the near term to accommodate the housing expansion in the Timberlea area.</li><li>• New landfill is under development.</li></ul>

## Power and Natural Gas

Issue Area	<b>Power and natural gas</b>
Description	<ul style="list-style-type: none"><li>• Alberta Power is the main provider of electrical power to the urban service area of Fort McMurray.</li><li>• Northwestern Utilities (NWU) provides natural gas services to residential and commercial customers throughout Wood Buffalo.</li></ul>
Resources	<ul style="list-style-type: none"><li>• NWU has 15 full-time and an additional 10-15 seasonal employees (summer months)</li></ul>
Key Indicator(s)	<ul style="list-style-type: none"><li>• NWU: 10,500 customers in Wood Buffalo</li></ul>
Issues	<ul style="list-style-type: none"><li>• Tight labour market in the region may drive up the cost of servicing by means of local wage inflation and the need to bring in workers from outside the area.</li><li>• Need to know timing of construction activities to be able to meet demand for residential services.</li></ul>

## Air Transportation

Issue Area	<b>Air Transportation</b>
Description	<ul style="list-style-type: none"><li>• Scheduled air service to Edmonton and Calgary provided by Canadian Regional and Air BC.</li><li>• Scheduled air services to Fort Chipewyan provided by Contact Air.</li><li>• Charter aircraft services (fixed wing, helicopter) provided by a number of companies in Fort McMurray.</li></ul>
Resources	<ul style="list-style-type: none"><li>• Fully equipped airport with runway capable of accommodating jet traffic.</li><li>• Air BC and Canadian Regional use turboprop planes to provide passenger services between Edmonton/Calgary and Fort McMurray.</li><li>• Contact Air has a fleet of nine planes to provide scheduled and charter service.</li></ul>
Key Indicator(s)	<ul style="list-style-type: none"><li>• Air BC has 2 daily flights from Edmonton + 1 non-stop flight from Calgary (except weekend).</li><li>• Canadian Regional has 5 daily flights from Edmonton (except weekend).</li><li>• Contact Air has 2 daily flights to Fort Chipewyan (except weekend).</li><li>• Number of enplaning/deplaning passengers was up by 19% in 1996 and another 16% in the first half of 1997, after a period of marginal decline starting in 1990.</li></ul>
Issues	<ul style="list-style-type: none"><li>• The federal government is about to withdraw from operating the airport. The Municipality is evaluating proposals of parties interested in operating the facility.</li><li>• Most passengers use the service for business purposes. A low cost carrier provided services for some time in 1996, but withdrew from the market.</li><li>• Morning and evening flights are the busiest. If demand warrants, larger aircraft could be used as opposed to adding new flights.</li></ul>

## Water Transportation

Issue Area	<b>Water Transportation</b>
Description	<ul style="list-style-type: none"><li>• Scheduled and unscheduled barge service from Fort McMurray to Fort Chipewyan and points in Northern Saskatchewan and the Northwest Territories.</li></ul>
Resources	<ul style="list-style-type: none"><li>• Tug and barges provided by two private operators.</li></ul>
Key Indicator(s)	<ul style="list-style-type: none"><li>• Scheduled service: one trip per month.</li></ul>
Issues	<ul style="list-style-type: none"><li>• Future road access to Lake Athabasca in Saskatchewan or Alberta will likely affect barge routes and schedules.</li><li>• Dredging by the Canadian Coast Guard has ceased.</li></ul>

## Land Transportation

Issue Area	<b>Land Transportation</b>
Description	<ul style="list-style-type: none"> <li>• Scheduled and charter bus service between Fort McMurray and Edmonton.</li> <li>• Freight train service between Lynton Landing to Edmonton.</li> <li>• Intra municipal bus service in the urban services area of Fort McMurray.</li> </ul>
Resources	<ul style="list-style-type: none"> <li>• Highway 63 (paved) from Edmonton to Fort McMurray and Fort McKay and beyond.</li> <li>• Highway 881 (paved) from Fort McMurray to Anzac, Janvier and Conklin.</li> <li>• Winter roads between Fort McMurray and Fort Chipewyan and La Loche (Saskatchewan). The former is operated and maintained by Alberta Transportation, the latter by private individuals.</li> <li>• Railway track from Edmonton to Lynton, just south of the urban services area of Fort McMurray.</li> </ul>
Key Indicator(s)	<ul style="list-style-type: none"> <li>• Four daily scheduled buses by two companies between Fort McMurray and Edmonton.</li> <li>• Commuter bus service to and from Syncrude (75 coaches) and Suncor (25 coaches) plants.</li> <li>• Number of buses in public transit system: 19</li> <li>• Average Daily Traffic Count on Highway 63 in 1996, south of Suncor turnoff: 4300 north of Suncor turnoff: 3200 south of Ft. McKay turnoff: 190</li> </ul>
Issues	<ul style="list-style-type: none"> <li>• Heavy traffic, especially during rush hours, between urban service area, the Suncor turn-off, and Syncrude's Mildred Lake plant; essentially bumper to bumper traffic slowing down the average speed from 100 km/h to 75-80 km/h.</li> <li>• Turn-off at Suncor improved with new off-ramp; turn-off at Syncrude at times difficult due to south bound traffic.</li> <li>• Reliance on one major highway underlines the vulnerability of the region to possible traffic disruptions as experienced by the fire-related road closures in 1996.</li> <li>• Extension of the Edmonton-Lynton rail track to the Syncrude and Suncor plants is not under active consideration by RaiLink, but could be considered in the future if warranted by freight volumes.</li> </ul>

## Telecommunication

Issue Area	<b>Telecommunication</b>
Description	<ul style="list-style-type: none"><li>• Radio and television service</li><li>• Telephone service</li></ul>
Resources	<ul style="list-style-type: none"><li>• Fort McMurray has 2 local AM and FM stations, CJOK and CKYX, respectively: Shaw Communications provides additional 16 radio stations and 54 television channels through its cable connections.</li><li>• Telus is the main telephone service provider.</li></ul>
Key Indicator(s)	
Issues	

## Land Use

Issue Area	<b>Land Use</b>
Description	<ul style="list-style-type: none"><li>• Municipality of Wood Buffalo is the approval authority for all development and building permits.</li><li>• Applications with regard to energy resources, including pipelines, are within the responsibility of the Alberta Energy and Utilities Board.</li></ul>
Resources	
Key Indicator(s)	
Issues	<ul style="list-style-type: none"><li>• Pipeline corridor runs through urban service area of Fort McMurray, sterilizing a swath of land for development.</li><li>• Approvals by the EUB takes precedent over municipal bylaws; the municipality's role in the approval process for energy projects is limited to that of intervenor in the EUB process.</li></ul>

## Regional Economy

Issue Area	<b>Regional Economy</b>
Description	<ul style="list-style-type: none"><li>• Regional economy is dominated by the oil sands industry, with two large operations, Syncrude and Suncor, located just north of the urban service area of Fort McMurray.</li><li>• Oil sands development may increase the oil sands mining operations in the Fort McKay area; commercial in situ operations may develop, mainly in the Conklin/Janvier area.</li><li>• Gas and some conventional oil activity is concentrated mainly in the southern half of the municipality.</li><li>• Forestry activity is dominated by logging and hauling for the ALPAC pulp mill in Boyle, which is located outside the Municipality of Wood Buffalo; logging of coniferous saw logs is carried out by Northlands Forest Products.</li><li>• Tourism industry activity is located throughout the municipality, although most of the tourism infrastructure is concentrated in the urban service area of Fort McMurray. The northern part of the municipality is adjacent to the Wood Buffalo National Park.</li></ul>
Issues	<ul style="list-style-type: none"><li>• Logging operations are seasonal and shift locations, thus contributing little in terms of assessment and hence property tax income for the Municipality, while using provincial, municipal, and private roads to haul logs to the mill.</li><li>• Oil sands mining activity affects the ability of the area to sustain forestry operations; Land disturbance due to mining reduces the annual allowable cut available to forestry operations.</li><li>• The status of gas reserves in oil sands mining leases is under review by the Energy Utilities Board.</li><li>• For issues related to Tourism, see section on the Fort McMurray Visitors' Bureau.</li></ul>



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