

**SECTION 17.0 – SOCIO-ECONOMICS
TABLE OF CONTENTS**

| | PAGE |
|---|-------------|
| 17.0 SOCIO-ECONOMICS | 17-1 |
| 17.1 Introduction..... | 17-1 |
| 17.1.1 Project Description..... | 17-1 |
| 17.2 Study Area..... | 17-2 |
| 17.2.1 Spatial Boundaries..... | 17-2 |
| 17.2.2 Temporal Boundaries..... | 17-4 |
| 17.2.3 Socio-Economic Valued Components and Key Indicators..... | 17-4 |
| 17.3 Issues and Assessment Criteria..... | 17-4 |
| 17.3.1 Issues Identification | 17-4 |
| 17.3.2 Assessment Criteria..... | 17-5 |
| 17.4 Methods..... | 17-6 |
| 17.4.1 Baseline Data Collection..... | 17-6 |
| 17.4.2 Types of Effects | 17-6 |
| 17.4.3 Effects Analysis..... | 17-7 |
| 17.5 Existing Conditions..... | 17-9 |
| 17.5.1 Regional Study Area | 17-9 |
| 17.5.2 Local Study Area..... | 17-44 |
| 17.6 Potential Effects and Mitigative Measures | 17-47 |
| 17.6.1 Introduction | 17-47 |
| 17.6.2 Effects on the RSA..... | 17-47 |
| 17.6.3 Effects on the LSA | 17-60 |
| 17.7 Cumulative Effects | 17-61 |
| 17.7.1 Regional Study Area | 17-61 |
| 17.7.2 Local Study Area..... | 17-62 |
| 17.8 Summary | 17-63 |
| 17.9 Literature Cited..... | 17-65 |

TABLE OF CONTENTS (cont)

PAGE

LIST OF TABLES

| | | |
|----------------|--|-------|
| Table 17.2-1: | Valued Components and Indicators | 17-4 |
| Table 17.3-1: | Social and Economic Assessment Criteria | 17-5 |
| Table 17.5-1: | Population in the Regional Municipality of Wood Buffalo | 17-10 |
| Table 17.5-2: | Current Projects in the RMWB | 17-14 |
| Table 17.5-3: | Labour Force Indicators in the Regional Municipality of Wood Buffalo, Alberta and Canada (2006) | 17-16 |
| Table 17.5-4: | Labour Force by Industry in the Regional Municipality of Wood Buffalo and Alberta (2006) | 17-17 |
| Table 17.5-5: | Populations in the Town of Lac La Biche and Lakeland County | 17-31 |
| Table 17.5-6: | Economic Indicators in the Town of Lac la Biche, Lakeland County and Alberta (2006) | 17-32 |
| Table 17.5-7: | Economic Indicators for the Aboriginal Population in the Regional Municipality of Wood Buffalo, Lac La Biche County and Alberta (2006) .. | 17-40 |
| Table 17.5-8: | Education Profile for the Aboriginal Population in the Regional Municipality of Wood Buffalo, Lac La Biche County and Alberta (2006) .. | 17-41 |
| Table 17.5-9: | Fort McMurray First Nation Reserves | 17-43 |
| Table 17.5-10: | Heart Lake First Nation Reserves | 17-43 |
| Table 17.5-11: | Beaver Lake Cree Nation Reserves | 17-43 |
| Table 17.5-12: | Chipewyan Prairie First Nation Reserves | 17-46 |
| Table 17.5-13: | Other Projects in the LSA | 17-48 |
| Table 17.6-1: | Summary of Socio-economic Effects and Mitigation on the RSA | 17-49 |
| Table 17.6-2: | Summary of Economic Effects during Construction and Operations | 17-52 |
| Table 17.8-1: | Summary of Project Effects During Construction and Operation | 17-64 |

LIST OF FIGURES

| | | |
|----------------|---|-------|
| Figure 17.2-1: | Local and Regional Socio-Economic Study Areas | 17-3 |
| Figure 17.5-1: | Population Trends in the Regional Municipality of Wood Buffalo | 17-11 |
| Figure 17.5-2: | Fort McMurray Population Forecast | 17-13 |
| Figure 17.5-3: | Total Potential Bitumen Production in Athabasca Deposit Region – January 2009 | 17-18 |
| Figure 17.5-4: | Oil Sands Industry Expenditure | 17-19 |
| Figure 17.5-5: | Forecast of New Permanent Operations Jobs in the Regional Municipality of Wood Buffalo | 17-20 |

17.0 SOCIO-ECONOMICS

17.1 Introduction

This section describes current baseline conditions of the study area, and the social and economic effects from construction and operation of the project. This Socio-Economic Impact Assessment (SEIA) follows the regulatory requirements in the Terms of Reference ([Volume 3, Appendix A](#)) and ERCB Guide 23.

17.1.1 Project Description

17.1.1.1 Construction Phase

Construction of the project is scheduled to commence in 2013 and is expected to take 30 months to complete. The total capital cost of the construction phase is estimated to be \$540M, of which 15% (\$81M) is expected to be spent in the Regional Municipality of Wood Buffalo (RMWB), 75% (\$405M) in Alberta and 10% (\$54M) in other jurisdictions.

A construction camp will be available on the site for the construction workforce (approximately 500 workers). The construction camp will be fully equipped with a first aid facility, staffed with a site nurse or paramedic, and equipped with an ambulance or dedicated vehicle for transportation of personnel to the nearest hospital if required. Bussing services will be available to bus the workers between the construction camp, well pads and CPF.

During the construction phase, there will be an average of 30 vehicles per day for 30 months, peaking at 50 per day, and not including drilling and associated activities. Most of the truck movements are expected to travel to the site via Highway 881.

17.1.1.2 Operation Phase

Operation of the project is scheduled to commence in 2015 and will operate for approximately 25 years. The total annual operating phase expenditures are estimated to be \$112M, of which 15% (\$17M) will be spent in the RMWB, 75% (\$84M) in Alberta and 10% (\$11M) in other parts of Canada.

An operation camp will be available on-site for the operation workforce (50 workers). The operation camp will be fully equipped with a first aid facility, staffed with a site nurse or paramedic, and equipped with an ambulance or dedicated vehicle for transportation of personnel to the nearest hospital if required. Bussing services will be available to bus the workers between the operation camp, well pads and CPF. There will be an average of 30 vehicles per day and most of the truck movements are expected to travel to the site via Highway 881.

17.2 Study Area

17.2.1 Spatial Boundaries

The study area has been selected to be responsive to both regional interests and to the interests of the communities closer to the project (Figure 17.2-1).

17.2.1.1 Regional Study Area

The Regional Study Area (RSA) includes communities and First Nations that may experience environmental, economic and social effects from the project and associated activities. The RSA encompasses the following:

- RMWB, with a focus on Fort McMurray and the area immediately to the south (the rural communities of Mariana Lake, Draper, Saprae Creek Estates, Gregoire Lake Estates and Anzac);
- Town of Lac La Biche and Lakeland County (now known as Lac La Biche County);
- Fort McMurray #468 First Nation (FMFN);
- Heart Lake First Nation (HLFN); and
- Beaver Lake Cree Nation (BLCN).

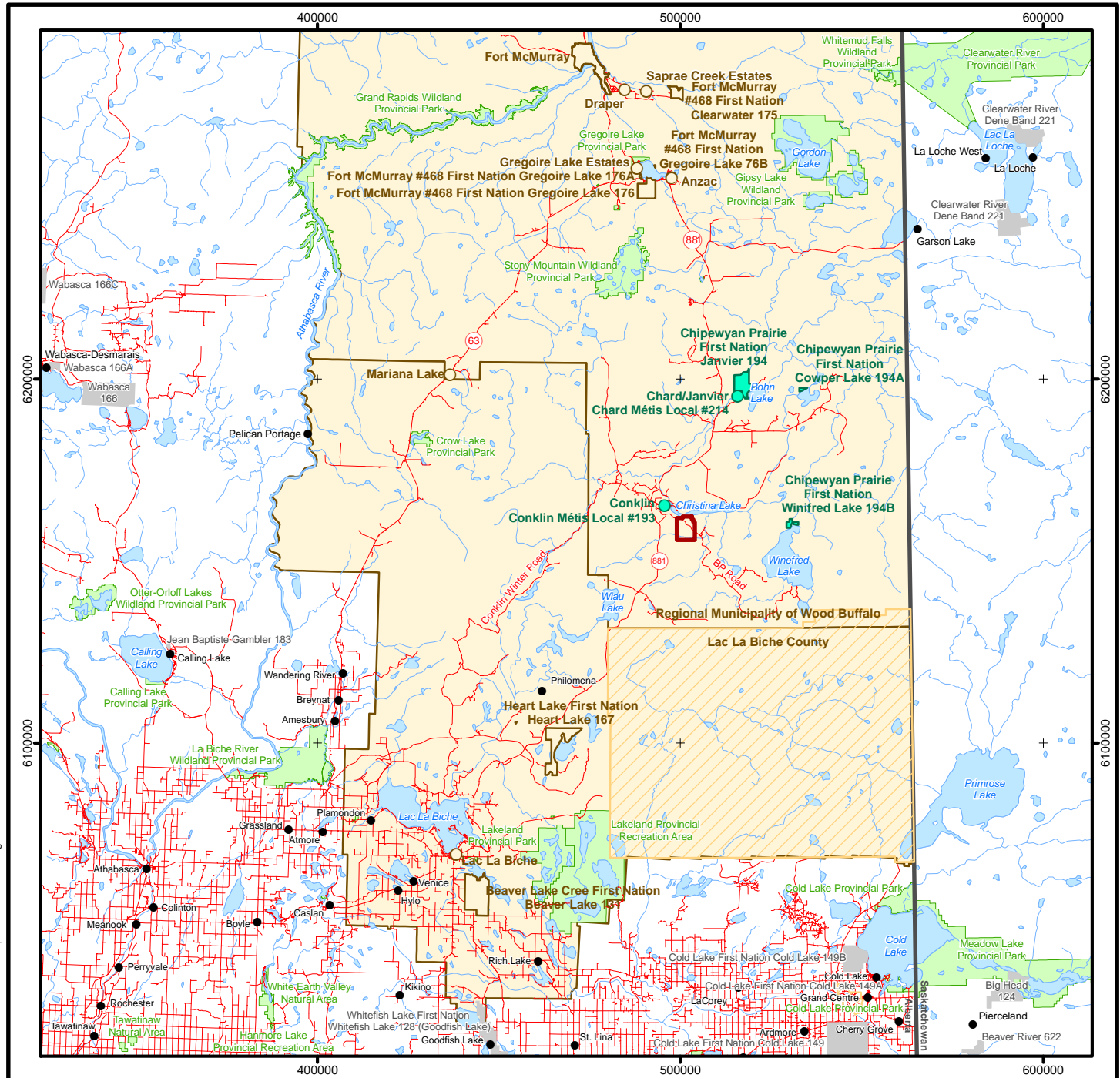
The RMWB is included in the RSA as it is the local authority responsible for administering development approvals and because it will receive the property taxes that flow from the project. The project is not anticipated to have any direct effect on communities north of Fort McMurray located within the RMWB. Accordingly, the focus of the baseline describes Fort McMurray and the area south of Fort McMurray.

Lac La Biche is included in the RSA because the community has the potential to supply goods and services and to accommodate workers associated with the project during construction and operations.

17.2.1.2 Local Study Area

The Local Study Area (LSA) includes communities, First Nations and Métis groups located in the vicinity of the project that are more likely to experience environmental, economic or social effects from the project. The LSA includes:

- the rural community of Conklin;
- the rural community of Janvier (Chard);
- Chipewyan Prairie Dene First Nation (CPDFN);
- members of Conklin Métis Local #193 resident in the community of Conklin; and
- members of Janvier Métis Local # 214 resident in the community of Janvier (Chard).




Legend

- Communities and First Nations in the Socio-Economic Regional Study Area
- Communities and First Nations in the Socio-Economic Local Study Area
- Project Area
- Cold Lake Air Weapons Range
- Park/Protected Area
- Waterbody
- Watercourse



Sources: AB Municipal Affairs, AB TPR, © Department of Natural Resources Canada. All rights reserved, ESRI, GeoBase®, KNOCC, Sask Gov't data reproduced with the permission of Her Majesty The Queen In Right Of Saskatchewan, Spatial Data Warehouse Ltd.



Korea National Oil Corporation

BlackGold Expansion Project

Local and Regional Socio-Economic Study Areas

| | |
|--|-------------------------------|
| DATE: December 2009 | Figure 17.2-1 |
| PROJECT: CE03745/500 | Fig17.02-01 Socio-Ec 09-12-09 |
| ANALYST: CF | QA/QC: KW RT DR |
| PROJECTION/DATUM: UTM Zone 12 NAD83 | DRAWN BY: AMEC |
| | PREPARED BY: AMEC |

17.2.2 Temporal Boundaries

The SEIA assesses the effects that may occur during construction and operation of the project from 2013 to 2015.

17.2.3 Socio-Economic Valued Components and Key Indicators

Socio-economic Valued Components (VCs) were identified based on prior experience with similar oil sands development projects in the RMWB. The VCs guided the data collection, analysis and organization of this section ([Table 17.2-1](#)).

Table 17.2-1: Valued Components and Indicators

| Valued Components | Indicators |
|--------------------------|---|
| Demography | <ul style="list-style-type: none"> Population change |
| Economy | <ul style="list-style-type: none"> Labour force indicators Earnings and income |
| Education | <ul style="list-style-type: none"> School enrolment Adult education attainment |
| Housing | <ul style="list-style-type: none"> Housing availability Housing affordability |
| Utilities | <ul style="list-style-type: none"> Utilities capacity Utilities availability |
| Roads and Transportation | <ul style="list-style-type: none"> Road conditions Traffic volumes Transportation methods and capacity |
| Protective Services | <ul style="list-style-type: none"> Fire services capacity Emergency services capacity Police services capacity |
| Health | <ul style="list-style-type: none"> Health services availability Health services capacity |

17.3 Issues and Assessment Criteria

17.3.1 Issues Identification

Socio-economic issues related to the project were identified through:

- the public consultation process;
- the Terms of Reference; and
- a review of recent SEIAs prepared for steam assisted gravity drainage (SAGD) projects in the area south of Fort McMurray (principally the Jackfish 2 Project).

The key socio-economic issues related to the project are described as follows:

- extent to which local residents will participate in the employment and business opportunities associated with the project;
- increase in demand for education and training services by workers and their families;

- pressure on the housing market created because of construction and operation workers from outside the LSA;
- increase in vehicular traffic on Secondary Highway 881 and through Conklin, and the implications of increased volumes on Highway safety, traffic congestion and slower travel times;
- increase in the demand for protective services; and
- increase in the demand for health services in the LSA and RSA as a result of the arrival of construction and operation workers from outside the LSA and the RSA.

17.3.2 Assessment Criteria

Table 17.3-1 presents a summary of the attributes used to characterize the social and economic effects of the project. These descriptors were selected based on a review of the oil sands development project assessments.

Table 17.3-1: Social and Economic Assessment Criteria

| Attribute | Definition |
|--------------------------|--|
| Direction | |
| Adverse | Effect is worsening or is undesirable |
| Neutral | Effect is not changing compared with baseline conditions and trends |
| Positive | Effect is improving or is desirable |
| Magnitude | |
| Negligible | Effects does not occur |
| Low | Effect that occurs might or might not be detectable, but is within the normal range of variability |
| Moderate | Effect is unlikely to pose a serious risk to the VEC or to represent a management challenge |
| High | Effect is likely to pose a serious risk to the selected VEC and is a management challenge |
| Geographic Extent | |
| Local | Effect will be limited to specific persons or communities |
| Regional | Effect is limited to one region |
| Provincial | Effect extends beyond one region or includes effects at a provincial level (Alberta) |
| National | Effects extends outside Alberta or nationally |
| Duration | |
| Short Term | Effect is limited to the two years construction period |
| Long Term | Effect extends throughout operations or beyond |
| Frequency | |
| Once | Occurs once |
| Sporadic | Occurs at sporadic intervals |
| Regular | Occurs regularly or at regular intervals |
| Continuous | Occurs continuously |
| Reversibility | |
| Reversible | Effect is reversible after the effect ceases |
| Irreversible | Effect is not reversible after the effect ceases |

These criteria, when applied to socio-economic data, emphasize trends rather than discretely measured quantitative changes. In interpreting effects, recognition is given to threshold effects where change can occur without any negative or positive consequences being apparent.

17.4 Methods

17.4.1 Baseline Data Collection

Primary data were collected during a field trip to the study area (8 to 11 September 2009), and through one-to-one and phone interviews with representatives of various public officials and governmental service providers in the RSA and LSA ([Appendix I1](#)).

Secondary data was collected from various governmental websites including, but not limited to:

- Government of Canada (Statistics Canada and Indian and Northern Affairs Canada (INAC));
- Government of Alberta;
- RMWB; and
- Lac La Biche County.

17.4.2 Types of Effects

The analysis considers two principal types of effects: social and economic.

- *Economic effects*, at the LSA and RSA and provincial levels of:
 - project expenditures; and
 - employment and income generated from the project; and
- *Social effects*, in the LSA and RSA, of construction and operations workers and their families on:
 - population;
 - adult education and training, and education services;
 - health services;
 - infrastructure (utilities, housing, roads and transportation); and
 - protective services (RCMP, fire and emergency services).

17.4.3 Effects Analysis

17.4.3.1 Economic Effects Analysis Methods

The approach used was as follows.

- Provided description of current economic conditions in the RSA and compared them with provincial conditions. The description included economic indicators, and quantitative and qualitative information on labour force indicators, occupations and income.
- Considered the potential changes that could take place in the economy of the RSA and Alberta as a result of the project.
- Identified economic effects on the RSA and Alberta using a multiplier approach. The Alberta economic effects were estimated using the Statistics Canada 2005 Interprovincial Input-Output (I-O) Model (Open Version) (Statistics Canada, Input-Output Division 2006c). Below is a description of this I-O Model:
 - The model differentiates economic effects into four categories:
 - direct effects on industries from which the project purchases its inputs;
 - indirect effects on those industries that supply inputs to the directly affected industries;
 - the effects of supplying those industries for all subsequent rounds of spending; and
 - induced effects on industries generated by spending household incomes.
 - *Effects Calculations* – The model calculates effects by industry sector for Alberta using several economic indicators, including gross output, gross domestic product, labour income and employment.
 - *Multiplier Results* – Provide an indication of the overall magnitude of the project and related changes in the economy's output and employment levels.
 - Limitations of the I-O Model:
 - the model excludes induced effects; these effects are estimated by conducting additional simulations with the model to account for consumer spending by workers. The model shows the total economic activity that a new project will generate and identifies which industry sectors will benefit from the project. The analysis distinguishes between initial construction and economic activity following initial construction;
 - the model is based on a snapshot of the economy reflecting the industry structure, technology, trade patterns and labour productivity for the base year for which the model was constructed. These factors may change over time or could be altered by very large projects;
 - the model excludes money supply, relative prices and inflation, and thus does not include economic behaviour relating to scarce or limited resources;

- there is no recognition in I-O Models of economies of scale and no limits to input supply availability are assumed. Thus, operations phase effects estimated for long periods may be less reliable than effects estimated for construction over a shorter and more immediate time period; and
- I-O Model results are frequently interpreted as indicating incremental effects, but such an interpretation is true only to the extent that there are sufficient unemployed resources. In the case of a fully employed economy, the estimated effects may be interpreted as the amount of economic activity elsewhere in the economy that must be re-allocated to accommodate a particular project.

17.4.3.2 Social Effects Analysis Methods

To conduct an effective and efficient social effects analysis, the following approach was used:

- described the current social conditions in the LSA and RSA in comparison with provincial norms and averages. Descriptions included social indicators, quantitative information and qualitative information;
- considered the potential changes that could take place in the characteristics of the LSA and the RSA as a result of the project;
- identified social effects based on the potential changes in both the LSA and the RSA;
- applied the assessment criteria to define the magnitude, duration, geographic area, direction and confidence of identified effects; and
- proposed appropriate mitigation measures that are likely to reduce negative effects and promote the positive effects of the project.

17.4.3.3 Cumulative Socio-economic Effects

Cumulative effects are those that result from the interaction of several past, present or reasonably foreseeable future projects or activities within a region. These effects may occur as a result of activities within the same spatial effect boundaries and/or activities that overlap temporally. Since socio-economic conditions are most typically the result of combined influences and are not project-specific, the standard practice in assessing potential project effects is to evaluate project-related effects in the context of current conditions and future trends. This requires identifying other economic development activities that are occurring and may occur in the region and assessing the incremental impacts that the existing and proposed economic development may have. This approach is inherently a cumulative effects assessment.

The socio-economic baseline information takes into consideration economic development activities and oil sands development (construction and operations) that is presently occurring in the RSA and LSA. Selected VCs of future oil sands development located in the LSA that could overlap construction and operations of this project are discussed in terms of their sensitivity to cumulative influences. Nine other projects located near Conklin in the LSA are considered during the cumulative effects assessment. Description of these projects will be provided under the economic baseline conditions of the LSA.

17.5 Existing Conditions

17.5.1 Regional Study Area

17.5.1.1 Regional Municipality of Wood Buffalo (with a Focus on Fort McMurray)

The RMWB is located in the northeast corner of Alberta bordering the Northwest Territories and Saskatchewan. The municipality encompasses an area of approximately 68 454 km² and it is one of the fastest growing regional municipalities in Canada. The RMWB is the focal point of the oil sands industry, where the pace of expansion has substantially accelerated in the last 10 years. From 2008 to 2020, nearly \$94 billion in capital expenditures are projected for oil sands developments in the RMWB. Of this total, over three quarters, or \$71 billion, is expected to take place north of Fort McMurray while the remainder, \$23 billion, will occur south of Fort McMurray. Over the next five years, an estimated \$13.5 billion, or an average of \$2.7 billion per year, is expected to be spent in capital expenditures on oil sands development in the RMWB south of Fort McMurray (Devon 2006a, 2006b).

The community of Fort McMurray is the commercial and administrative centre for the RMWB and the oil sands region. During the expansion of oil sands mining in the RMWB, Fort McMurray transformed from a small northern service centre to a modern urban community (RMWB 2003).

Demography

As a result of the economic boom from oil sands investments in the RMWB over the last seven years, a significant population increase has occurred. According to the RMWB 2006 census, prior to major investments in the oil sands, and particularly for 1986 to 1996, the population change was 1% (from 36 810 to 37 222) (RMWB 2006). From 1996 to 2006, which coincided with major oil sands investments, the population increased by 86% (from 37 222 to 67 067). This is significantly higher than the provincial population change (22%) during the same period. Adding the shadow population in the RMWB (i.e., any person who is present in the community and has a residence elsewhere) increases the population in the regional municipality by 114% during that timeframe. Most of population growth occurred in Fort McMurray and work camps.

The connection between population and oil sands development is evident by the following:

- 2002 to 2005 – Fort McMurray accounted for 92% of the population growth and the work camps accounted for 8% (other areas remained fairly constant);
- 2005 to 2008 – Fort McMurray accounted for 35% of the population growth and the work camps accounted for 53% (RMWB 2009a); and
- 2009 – Almost two-thirds of Fort McMurray population is male (this represents single workers working in construction activities near Fort McMurray) (Gordon pers. comm.).

Development of the oil sands will continue to cause the population of the urban service area to grow. Population projections, prepared by the RMWB, anticipate the population of the urban service area to exceed 200 000 people by the year 2016 (RMWB 2009b).

Table 17.5-1 provides further information on the population of the RMWB and Figure 17.5-1 summarizes the population trend for 1999 to 2007 in Fort McMurray, rural communities and work camps.

Table 17.5-1: Population in the Regional Municipality of Wood Buffalo

| Area | 1999 | 2008 |
|-----------------------|---------------|----------------|
| Fort McMurray | 36 452 | 72 363 |
| Anzac | 397 | 837 |
| Conklin | 215 | 372 |
| Darper | 47 | 267 |
| Fort Fitzgerald | N/A | 10 |
| Fort Chipewyan | 1 020 | 1 016 |
| Fort McKay | 262 | 862 |
| Gregoire Lake Estates | 163 | 253 |
| Janvier (Chard) | 207 | 194 |
| Mariana Lake | 7 | 4 |
| Saprae Creek | 509 | 862 |
| The Hinterland | N/A | 8 |
| Work Camps | 3 568 | 26 284 |
| Total | 42 847 | 103 334 |

Notes:

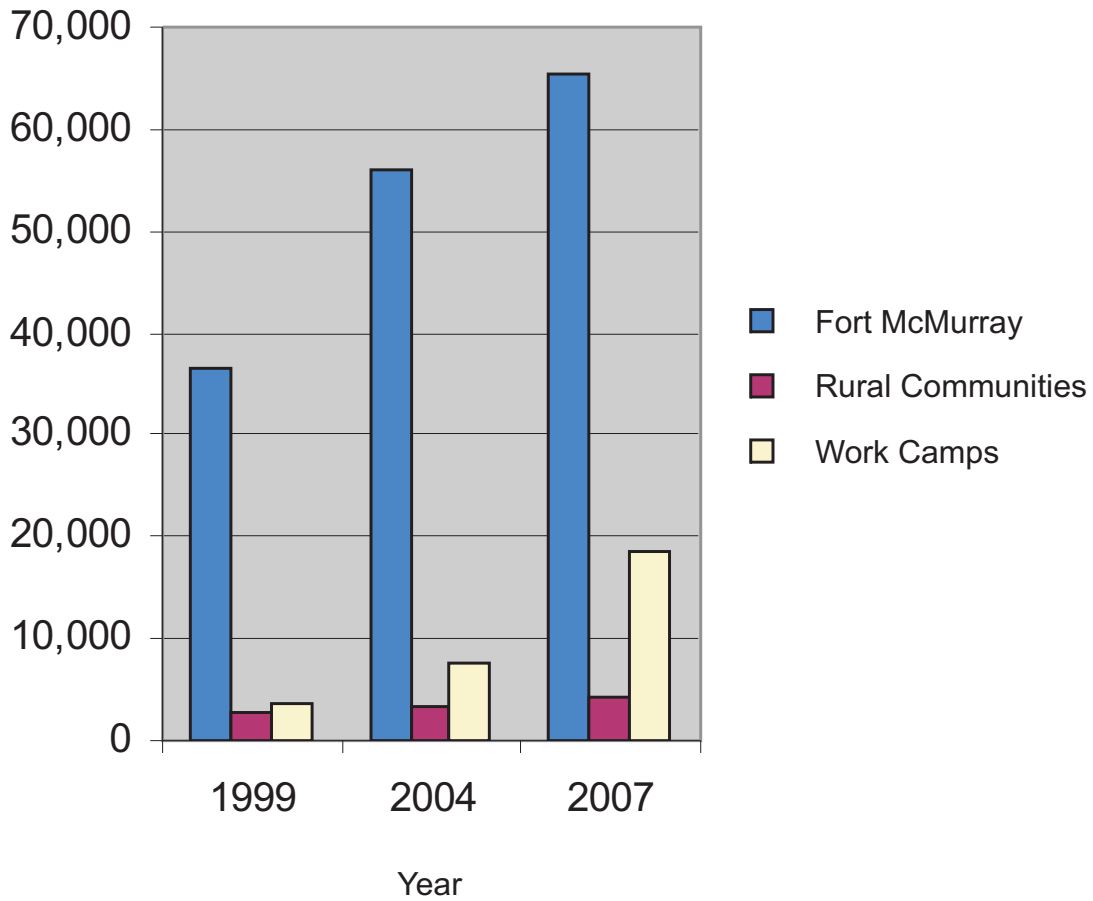
N/A = population not available.

Source: RMWB 2008c Municipal Census.

The RMWB applies for grants from the provincial government based on the last population census, which does not include or count shadow population (26 284 people in 2008). Due to the recession, more people were available for work at a lower professional rate and expansion of municipal services has become more efficient due to more reasonable costs. Presently, most of the oil sands developments are in the construction phase and operations have not yet started. By 2014, the RMWB is expecting to see a demographic shift as more operations workers are expected to permanently move to the region with their families (Theberge pers. comm.).

This demographic shift would change Fort McMurray from a predominately male urban centre to a family urban centre. Supporting factors for this shift include the expansion of the municipality's services to meet future demand and the availability of houses at affordable prices. In realizing the importance of planning in the province's biggest resource town, the Government of Alberta has started to prepare for its next phase of growth. Funding of \$24 M over five years has been announced to develop neighbourhoods in Fort McMurray for an additional 44 000 residents. The new lots will be available in about two years. By paying for lot servicing up front, the province will allow the money earned from the sale of lots to developers to flow back into the neighbourhoods themselves (for schools, health clinics and other services) instead of into general revenues (Edmonton Journal 2009). This approach is appropriate to allow faster expansion at reasonable costs, to prepare Fort McMurray to accommodate families instead of single workers, and to allow the demographic shift to happen by 2014.

Population



Source: RMWB (2007)



Korea National Oil Corporation
BlackGold Expansion Project

Population Trends in the Regional Municipality of Wood Buffalo

| | | | |
|-------------------------|--------------------|-------------------------------------|--|
| DATE: December 2009 | | Fig17.05-01 Pop Trend RMWB 09-11-06 | |
| PROJECT: CE03745/500 | | DRAWN BY: AMEC | |
| ANALYST: TR | QA/QC: KW RT DR | PREPARED BY: KNOC | |

Figure 17.5-1

Fort McMurray is expected to see an 8% per year population growth through 2010, excluding the over 27 000 workers currently living in work camps, hotels and motels (ODG 2009) (Figure 17.5-2).

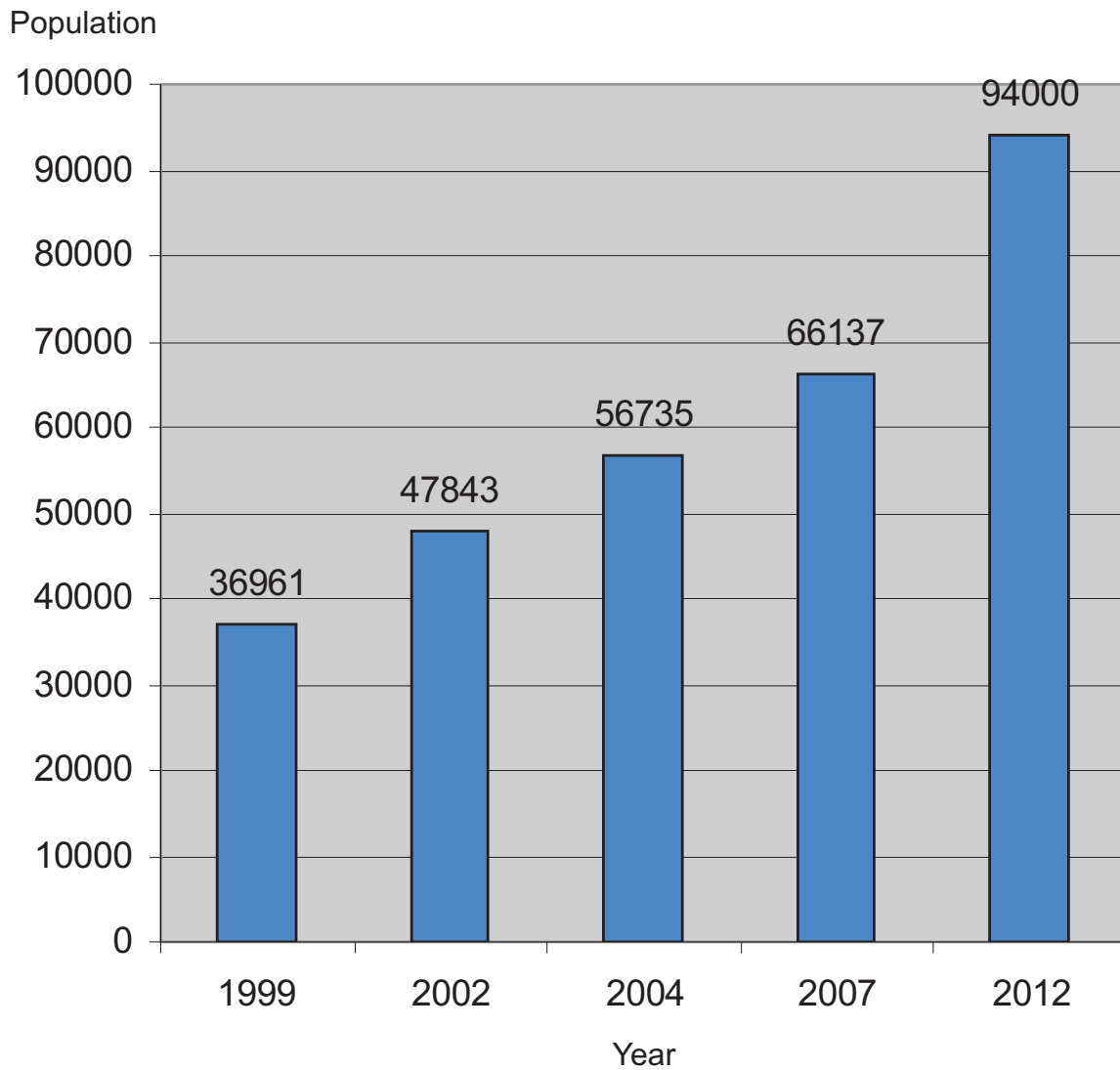
Economy

The project's RSA is the centre of Alberta oil sands industry. The industry has grown significantly during the last six years from less than 1 million of barrels per day (mb/d) in 2003 to more than 1.5 mb/d in 2008, which resulted in an economic boom and population increase (ODG 2009).

Oil sands activities dominate the local economy, providing employment for industrial plant workers and construction trades workers, as well as a range of activities for local contractors and suppliers. In addition, there are other contributors to the local economy, particularly the forestry, natural gas, small business manufacturing and tourism industries. In terms of oil sands investment in the RMWB, in 2006 construction projects were valued at \$14.6 billion, future approved projects at \$9.4 billion and proposed projects awaiting approvals at \$29.7 billion. All of these projects are scheduled for construction within the next 10 years.

In 2007, the RMWB had an operating budget of nearly \$250.5M, which represented a \$102.3 M increase over the 2006 budget. The recent growth in the regional municipality required additional costs to maintain the same level of service to a larger population (which increased the budget by \$36.8M), and an additional \$18.7M of inflationary costs (RMWB 2007a).

According to Alberta Finance and Enterprises, between 2008 and 2012 almost \$102 553M will be spent on infrastructure and oil sands development projects in the RMWB. This total is composed of \$8 119.5M in announced projects, \$349 7M in those that are completed and nearing completion, \$80 405M in proposed and on-hold projects, and \$13 747.2M in projects under construction (Table 17.5-2).



Source: ODG (2009)



**Korea
National Oil Corporation**
BlackGold Expansion Project

**Fort McMurray
Population Forecast**

| | | | |
|-------------------------|--------------|----|----|
| DATE: December 2009 | | | |
| PROJECT: CE03745/500 | | | |
| ANALYST: TR | QA/QC: KW | RT | DR |

| |
|--------------------------------|
| Fig17.05-02 Pop FC FM 09-11-06 |
| DRAWN BY: AMEC |
| PREPARED BY: KNOC |

**Figure
17.5-2**

Table 17.5-2: Current Projects in the RMWB

| Project Description | Cost in \$ Millions | Current Status |
|---|--------------------------------|-----------------------|
| New Northbound Bridge Across Athabasca River | \$126.0 | Under construction |
| Solid Waste Office and Shop | \$6.8 | Proposed |
| Fort McKay Bridge Replacement | \$23.7 | Proposed |
| 2009 Urban Road Rehabilitation Program | \$7.0 | Proposed |
| New Transit Terminals | \$5.6 | Proposed |
| Wastewater Treatment Plant Expansion, Phases 1 and 2 | \$226.0 | Completed |
| Athabasca Water Treatment Plant Expansion | \$123.7 | Under construction |
| 'Kirby' In-Situ Oilsands Project | \$620.0 | Proposed |
| 'Project Horizon' Mining and Drilling Project, Phases 2 and 3 | \$3 100.0 | On hold |
| 'Poplar Creek' Bitumen Extraction Project | \$100.0 | Proposed |
| 'Fort Hills' Oilsands Mine | \$10 000.0 | On hold |
| 'Sunrise Thermal Project', Phase 2 | \$1 900.0 | On hold |
| 'Kearl Lake' Oilsands Mine, Phase 1 | \$8 000.0 | Announced |
| Pilot Plant | \$50.0 | Proposed |
| 'Long Lake South' SAGD Project, Phase 2 (Kinosis) | \$2 790.0 | On hold |
| Ash Processing Pit (part of Long Lake Project) | \$175.0 | Under construction |
| 'May River' Commercial Bitumen Project, Phase 1 | \$225.0 | Proposed |
| Muskeg River Mine Expansion (part of Alberta Oilsands Project (AOSP)) | \$5 000.0 | Under construction |
| 'Voyageur South' Oilsands Mining Operation | \$4 400.0 | On hold |
| 'Firebag' Oilsands Project, Stages 3 to 6 | \$9 000.0 | On hold |
| 'Voyageur' Oilsands Third Upgrader (U3) | \$11 600.0 | On hold |
| North Steepbank Mine Extension | \$400.0 | On hold |
| 'Voyageur Village' Administration and Support Buildings | \$234.0 | Under construction |
| North Mine Development | \$9 000.0 | Proposed |
| 'Equinox' Oilsands Mine (Lease 14) | \$2 500.0 | Proposed |
| 'Frontier' Oilsands Mine, Phase 1 | \$6 000.0 | Proposed |
| 'Terre de Grace' SAGD Oilsands Project | \$3 500.0 | On hold |
| The Shores at Meadow Creek Village' Apartments | \$14.0 | Completed |
| 'Sandpiper Cove in Timberlea Stage 2' Townhouses | \$11.0 | Under construction |
| 'Sandpiper Cove in Timberlea Stage 1' Apartments and Townhouses | \$36.0 | Under construction |
| 'Cascades at Meadow Creek Village' Apartments | \$12.0 | Under construction |
| New School (Grades 5 to 12) | \$20.6 | Nearing completion |
| Affordable Housing Units | \$5.7 | Under construction |
| SAGD Bitumen Production | \$575.0 | Under construction |
| In-Situ Oilsands Project, Phase 2B | \$1 200.0 | Proposed |
| Seniors Facility | \$5.0 | Proposed |
| Land Development, Gregoire | \$10.0 | Proposed |
| Highway 63/Thickwood Blvd and Highway 63/Confederation Way Interchanges | \$300.0 | Under construction |
| Holding Cells, RCMP Detachment | \$9.0 | Proposed |
| Fort McMurray Airport Upgrade/Expansion | \$110.0 | Proposed |
| Water Treatment Plant Waste Management System | \$20.0 | Proposed |
| Saline Creek Parkway (four-lane road along Clearwater River) | \$17.0 | Proposed |
| King Street Booster Pumphouse and Pipelines | \$10.0 | Proposed |
| Beacon Hill Reservoir and Pumphouse | \$6.0 | Proposed |
| Franklin Avenue/Riedel St. Upgrades | \$5.5 | Proposed |
| Regional Landfill, Stage 1 | \$38.5 | Under construction |
| Lower Townsite Wastewater Collection System Upgrade | \$30.0 | Under construction |
| MacDonald Island Drive Reconstruction | \$7.6 | Nearing completion |
| Sewer Line Replacement, Signal Road and Macdonald Crescent | \$6.5 | Nearing completion |

| Project Description | Cost in \$ Millions | Current Status |
|--|--------------------------------|-----------------------|
| Long Term Care Centre | \$35.0 | Proposed |
| Two Community Health Centres – Timberlea and Thickwood | \$28.2 | Proposed |
| New Junior High School (Grades 7 to 9) | \$40.8 | Under construction |
| High School (Grades 7 to 12), Timberlea | \$39.5 | Announced |
| Trades and Technology Wing Expansion | \$100.0 | Proposed |
| Phase 4: Upgrader Expansion Phase 2/Aurora Mine Train 3 | \$2 300.0 | Proposed |
| 'Bond Street Towers' Condominiums | \$160.0 | Proposed |
| 'Longboat Landing' Townhouses and Apartments | \$560.0 | On hold |
| 'Hawthorne Heights at Eagle Ridge' Townhouses and Apartment Condos | \$45.0 | Under construction |
| Suncor Community Leisure Centre (previously described as MacDonald Island C.A. Knight Park Recreation Complex) | \$170.0 | Under construction |
| Jubilee Centre Renovations | \$23.0 | Announced |
| Recreation Centre, Saline Creek | \$30.0 | Proposed |
| Twinning Highway 63 | \$940.0 | Under construction |
| Sulphur Emission Reduction Program (SERP) | \$1 600.0 | Approved |
| 'Borealis' SAGD Project, Phase 1 | \$1 000.0 | Proposed |
| 'Sunrise Thermal Project' SAGD Oilsands Project, Phase 1 | \$2 500.0 | On hold |
| SAGD Oilsands Project | \$394.3 | Proposed |
| 'Firebag' Administration Complex and Village Camp Core | \$177.0 | On hold |
| 'Kai Kos Dehseh' Bitumen (SAGD) Project, Phase 1 | \$850.0 | Under construction |
| New 'Third Lake' Power Plant | \$60.0 | Nearing completion |
| 'Jackpine' Mine Mining and Extraction Facility, Phase 1 | \$2 000.0 | Under construction |
| 'Tamarack' Bitumen Project, Phase 1 | \$1 250.0 | Proposed |
| Waddell Substation and Transmission Line | \$15.0 | Completed |
| MacKay River SAGD Expansion | \$1 000.0 | On hold |
| Hangingstone SAGD Commercial Production Project | \$750.0 | Proposed |
| 'Jackfish' SAGD Oilsands Project, Phase 2 (J2) | \$1 060.0 | Under construction |
| 'Algar' SAGD Project (Pod 2) | \$363.0 | Under construction |
| 'Gateway' Bitumen and Condensate Pipelines (Alberta portion) | \$1 500.0 | Proposed |
| 'Fort Hills' Bitumen/Diluent Pipelines and Terminal Facilities | \$2 000.0 | On hold |
| Total Value of Projects | \$102 553.0 | |

Source: Dumaresq 2009 pers. comm.

The 2006 census shows the RMWB has higher labour force participation (82.3%) and employment rates (79.5%), and a lower unemployment rate (2.8%), compared to both provincial and national rates (Table 17.5-3). A recent survey prepared by Alberta Employment and Immigration shows that the unemployment rate in the RMWB increased to 5.4% in July 2009. Despite this increase, the unemployment rate in the RMWB is still lower than the provincial rate of 7.2% and the national rate of 8.6% (Alberta Employment and Immigration 2009). The increase in the RMWB unemployment rate suggests that there are more workers available in the local pool than in 2006 when the unemployment rate was 2.8%.

Table 17.5-3: Labour Force Indicators in the Regional Municipality of Wood Buffalo, Alberta and Canada (2006)

| Area | Labour Force Participation Rate ¹ (%) | Unemployment Rate ² (%) | Employment Rate ³ (%) |
|-------------------|--|------------------------------------|----------------------------------|
| RMWB | 82.3 | 2.8 | 79.5 |
| Fort McMurray | 82.4 | 2.7 | 79.7 |
| Rural communities | 79.5 | 4.0 | 75.5 |
| Alberta | 74.8 | 3.4 | 72.3 |
| Canada | 68.0 | 6.1 | 63.8 |

Notes:

- ¹ Labour force participation rate: labour force in the week prior to Census Day, expressed as a percentage of the population 15 years of age and over.
- ² Unemployment rate: number of unemployed persons expressed as a percentage of the labour force in the week prior to Census Day.
- ³ Employment rate: number of persons employed in the week prior to Census Day, expressed as a percentage of the total population 15 years of age and over.

Source: RMWB (2006).

The 2006 census also shows that for the RMWB 2006 population of 51 496, the total experienced labour force 15 years and over was 33 615 people (31.4% in agriculture and other resource-based industries, 14.3% in manufacturing and construction, 13.2% in business services, 12.7% in wholesale and retail trade, 9.9% in health and education, 3.8% in finance and real estate, and 14.4% in other services).

Earnings statistics show that 70% of people 15 years and over in the RMWB have earnings from employment, compared to 62.5% in Alberta. Median earnings were \$47 860 in the RMWB and \$29 738 in Alberta. Income statistics suggest that the percentage of people 15 years and over with any income in the RMWB is 76.5%, compared to 76.4% in Alberta. The median total income is significantly different, however, with \$43 920 in the RMWB and \$28 896 in Alberta as a whole. Earnings as a percentage of total income was 95.2% in the RMWB, compared to 82.3% in Alberta. Table 17.5-4 provides a comparison between labour force indicators in the RMWB and Alberta as a whole in 2006.

Table 17.5-4: Labour Force by Industry in the Regional Municipality of Wood Buffalo and Alberta (2006)

| | RMWB | Alberta |
|---|-------------|----------------|
| Industry | | |
| Total experienced labour force ¹ (#) | 33 615 | 1 928 635 |
| – Agriculture and other resource-based industries (%) | 31.4 | 11.8 |
| – Manufacturing and construction industries (%) | 14.3 | 15.9 |
| – Wholesale and retail trade (%) | 12.7 | 15.1 |
| – Finance and real estate (%) | 3.8 | 5.0 |
| – Health and education (%) | 9.9 | 15.3 |
| – Business services (%) | 13.2 | 18.3 |
| – Other services (%) | 14.4 | 18.2 |
| Earnings and Income | | |
| Persons 15 years and older with earnings (%) | 87.6 | 77.4 |
| Median earnings persons 15 years and older (\$) | 47 860 | 29 738 |
| Persons 15 years and older with income (%) | 95.8 | 94.5 |
| Median income persons 15 years and older (\$) | 43 920 | 28 896 |
| Composition of Total Income | | |
| Earnings as % of total income | 95.2 | 82.3 |
| Government transfer as % of total income | 2.4 | 7.2 |
| Other money as a % of total income | 2.5 | 10.6 |

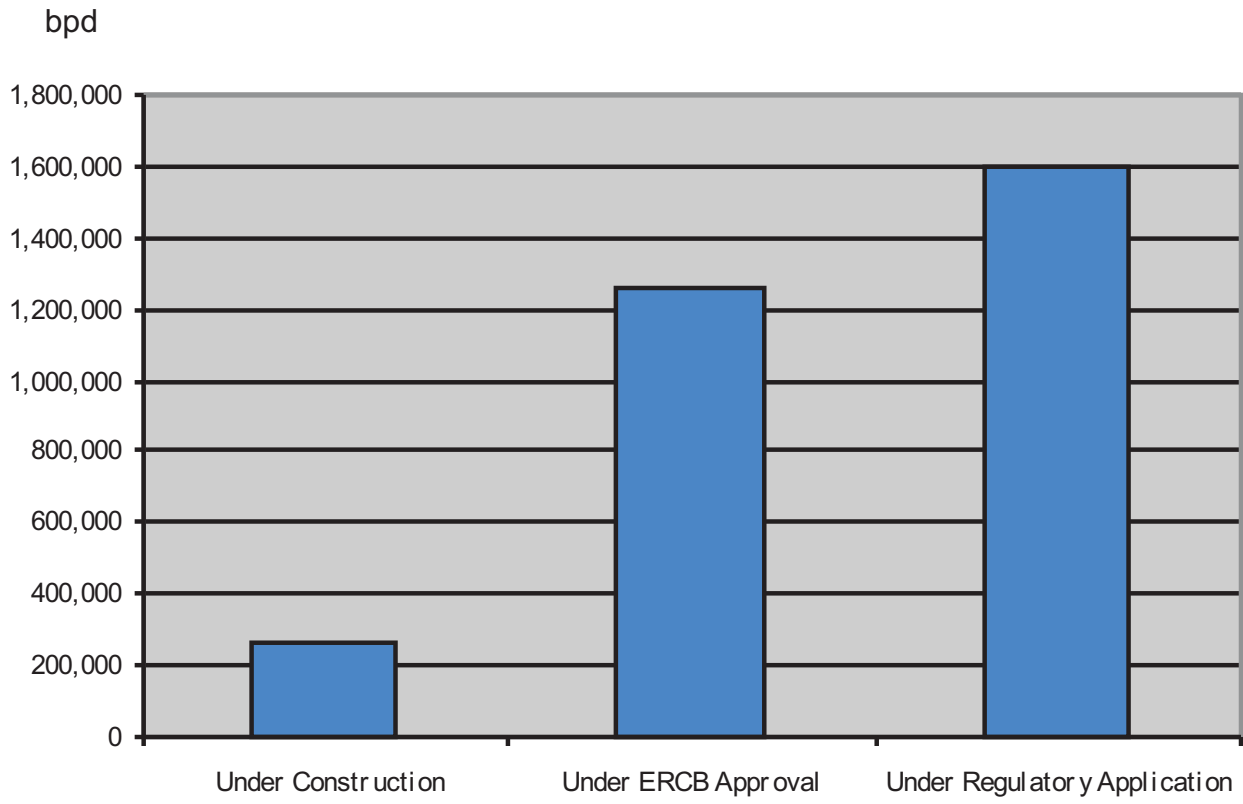
Note:

¹ Experienced labour force: persons 15 years and over, excluding institutional residents, who were employed or unemployed during the week prior to Census Day, and who had last worked for pay or in self-employment in either that year or the previous year.

Source: Statistics Canada (2006b).

As of January 2009, the total potential bitumen production from oil sands projects in the Athabasca deposit region was 269 500 b/d for projects under construction, 1 259 000 b/d for projects under Energy Resources Conservation Board approval and 1 600 000 b/d for projects under regulatory application (Figure 17.5-3). The Oilsands Industry Overview, prepared by the Oilsands Developer Group, suggests that despite setbacks, oil sands production is expected to increase. The combined oil sands industry expenditure forecast indicates that the construction capital expenditures for 2008 to 2012 will be \$126 billion and operating costs will be \$79 billion for the same period (Figure 17.5-4). Construction expenditures will increase from \$18 billion in 2007 to \$22 billion in 2012 and operating expenditures from \$11 billion in 2007 to \$20 billion in 2012 (ODG 2009).

The forecast of new permanent operations jobs in the RMWB will continue to increase during 2008 to 2012. Cumulative new operations jobs will reach more than 8 000 in 2009 and almost 13 700 in 2012 (Figure 17.5-5). For every permanent operations job, three jobs are created locally and six nationally (ODG 2009).



Source: Oilsands Producers (2009)



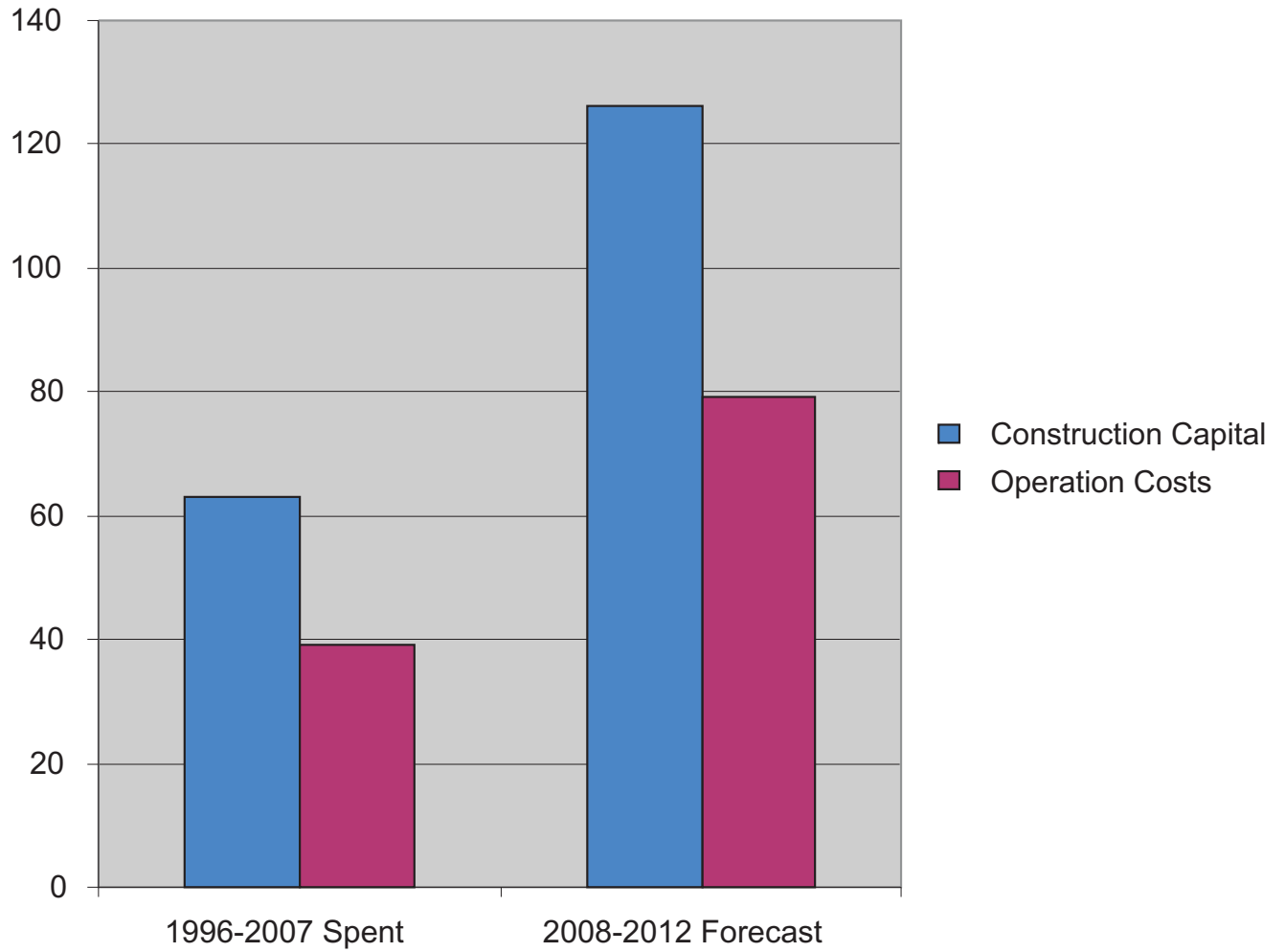
Korea National Oil Corporation
BlackGold Expansion Project

Total Potential Bitumen Production
 in the Athabasca Deposit Region
 January 2009

| | | | |
|-------------------------|--------------------|-----------------------------------|--|
| DATE: December 2009 | | Fig17.05-03 Pot Bid Prod 09-11-06 | |
| PROJECT: CE03745/500 | | DRAWN BY: AMEC | |
| ANALYST: TR | QA/QC: KW RT DR | PREPARED BY: KNOC | |

Figure 17.5-3

Cost
(\$ billions)



Source: Oilsands Producers



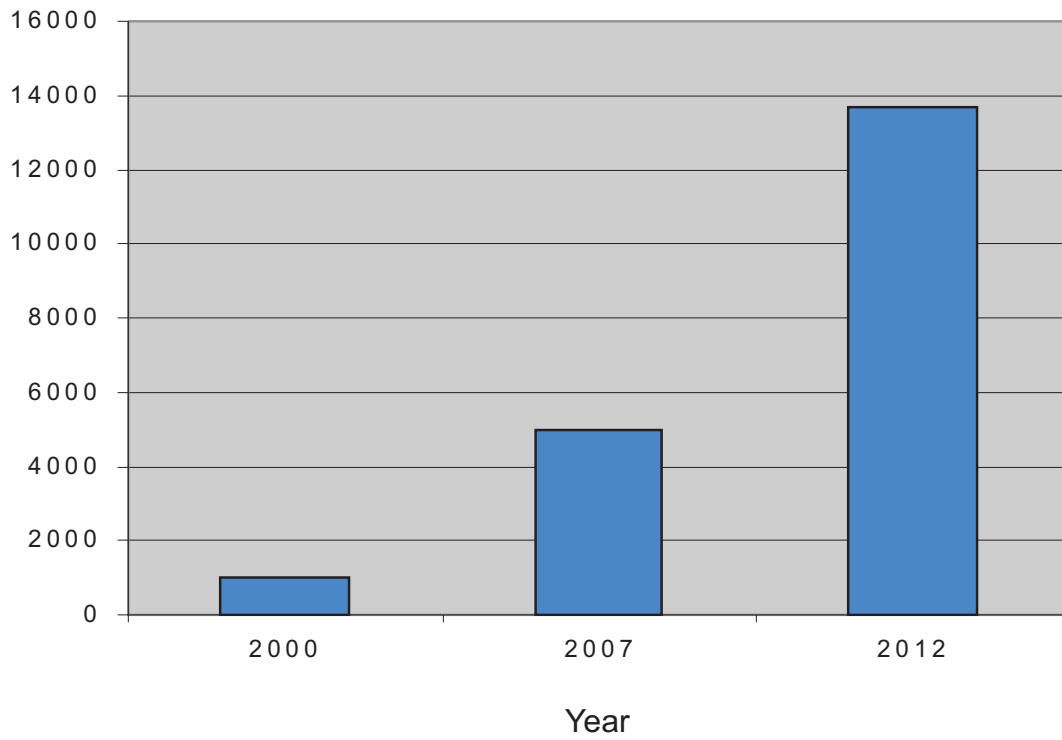
**Korea
National Oil Corporation**
BlackGold Expansion Project

**Oil Sands
Industry Expenditure**

| | | | |
|-------------------------|--------------------|---------------------------------|--|
| DATE: December 2009 | | Fig17.05-04 OS Ind Exp 09-11-06 | |
| PROJECT: CE03745/500 | | DRAWN BY: AMEC | |
| ANALYST: TR | QA/QC: KW RT DR | PREPARED BY: KNOC | |

**Figure
17.5-4**

of Jobs



Source: ODG (2009)



**Korea
National Oil Corporation**
BlackGold Expansion Project

**Forecast of New Permanent
Operations Jobs in the
Regional Municipality of
Wood Buffalo**

| | | | |
|-------------------------|--------------------|---------------------------------|--|
| DATE: December 2009 | | Fig17.05-05 FC Perm Op 09-11-26 | |
| PROJECT: CE03745/500 | | DRAWN BY: AMEC | |
| ANALYST: TR | QA/QC: KW RT DR | PREPARED BY: KNOC | |

**Figure
17.5-5**

Education

School education services in the RMWB are offered by the Fort McMurray Public School District and the Fort McMurray Catholic School District, while adult education is offered by Keyano College.

In 2006, the RMWB had a higher percentage of persons with trades' certification than Alberta as a whole (18.2% for the RMWB and 10.8% for Alberta) and a lower percentage of persons with university credentials (12.9% for the RMWB and 17.4% in Alberta). This finding is consistent with the demand for oil sands industry jobs that call for technical and highly trained, skilled workers. Fort McMurray residents achieved higher levels of education than residents in the rural communities in the RMWB. The percentage of residents with a high school diploma in Fort McMurray was 20.1% compared to 14.7% in the rural communities. Further, the percentage of residents with a college or technical certification/diploma in Fort McMurray was 17.4%, compared to 8.7% in rural communities (RMWB 2006).

As of 2003, Fort McMurray Public School District, with an operating budget of \$36M, had 260 teachers assisted by nearly 300 support staff. The district has seven Kindergarten to Grade 8 elementary-junior high schools, two Grade 9 to 12 junior-senior high schools, and a Second Chance Alternate School. French Immersion is offered from Kindergarten to Grade 8, and as a core course in high school; French as a second language is offered in Grades 4 to 12. The district also offers several programs for students with special needs, Aboriginal students and students requiring English as a second language (RMWB 2003). According to the Fort McMurray Public School Board, there were 4 647 enrolled students during the 2004-2005 school year. With the recent population growth in the region, the School Board proposed construction of three additional Kindergarten to Grade 6 schools (RMWB 2006).

There has been no increase in the number of students as a result of oil sands development in the area during the last two years. This is due in part to the fact that workers often choose to come without their families and also to the slow down of the economy. The school district has sufficient budget and resources, with the number of teachers increasing to 280, and two more additional schools now available: the Christian School and the Islamic School. It should be noted that high accommodation costs leads to teachers living in shared accommodation (Eaton 2009 pers. comm. 2009).

As of 2006, The Fort McMurray Catholic School District had seven elementary schools throughout Fort McMurray and one high school in Thickwood Heights, 240 full-time teachers and 175 support staff. The district offers all Alberta learning core programs, full French Immersion programming, Aboriginal programming, Integrated Special Needs programming, fine arts and athletic opportunities (RMWB 2003). The Fort McMurray Catholic Board of Education serves 4 178 students in eight schools in Fort McMurray (RMWB 2006).

There was an increase in enrolment by 2% in Fort McMurray Catholic School in 2009 compared to 2008, when enrolment dropped as a result of some people moving to Saskatchewan for work (Gagnon 2009 pers. comm.).

Keyano College offers courses for university accreditation, the oil sands industry, business and computer technology, health and human services, visual and performing arts, and personal interest. Since 1965, the college has grown in response to oil sands industry employment demands, providing technical training programs and working closely with industry through partnerships to provide skills upgrading for oil sands and other industry workers. Partnering with Suncor, Syncrude and Albian Sands has generated a growth to three campuses, two in Fort McMurray and one in Fort Chipewyan, as well as learning centers in Fort McKay, Gregoire Lake, Conklin and Janvier (RMWB 2003).

During the economic boom people were less likely to enroll in post-secondary education as they were able to find high paying jobs without a post secondary education or training. During the recession, fewer jobs have been available and more people are interested in continuing their education and taking additional training courses. Training courses offered for industry sectors were impacted by the recent recession as professional development received less attention by companies during periods of economic slow down. In the last few months, there were signs that this situation was changing as more companies showed renewed interest in training. Keyano College works with industry sectors to cover training and education demands created in a growing community. The slow down allowed community service providers including Keyano College to catch up and expand their services at lower cost, allowing for more efficient expansion (Thomas 2009 pers. comm.).

Infrastructure – Housing, Utilities, Roads and Transportation

Housing

The rapid pace of economic and population growth in the RMWB did not allow the municipality to undertake comprehensive planning for development. In addition, there were limitations on the ability of private sector developers and home builders to increase the supply of housing at a rate that meets the pace of demands. As a direct result, Fort McMurray experienced rapidly escalating house prices and rental rates, and a vacancy rate approaching zero. As of 2006, the housing shortage was estimated to be in the range of 3 500 to 4 000 houses (Government of Alberta 2006).

In 2005, Fort McMurray had the highest house prices in Alberta and shelter costs were 70% above those of Edmonton. The average single-family home price was \$483 913 in September 2006, compared with \$326 292 in Edmonton and \$410 326 in Calgary. An October 2006 rental survey indicated that a one-bedroom apartment in the Fort McMurray urban area rented for \$1 314 and a two-bedroom apartment rented for \$1 536 per month. These rates are considerably higher than the 2000 rates of \$760 for a one-bedroom and \$895 for a two-bedroom apartment (Government of Alberta 2006).

In 2006, to address the housing issue in the RMWB, the Government of Alberta provided:

- \$45M for 300 affordable housing units;
- \$1M per year for three years for rent supplements for 150 households for workers in the services and support industries;
- \$1.5M per year for three years to assist in providing shelter for homeless individuals; and
- \$1.2M per year for three years to provide planning support to RMWB (Government of Alberta 2006).

Despite high housing costs, the majority of residents within the region own their home (81.6%), as compared to those renting or leasing (18.4%). Since 1999, the general trend has been one of increasing home ownership as compared to renting or leasing (RMWB 2009c). As of August 2009 there was a shortage of 3 000 houses in the Fort McMurray urban area (Theberge pers. comm.).

Through its Planning and Development department, the RMWB produced The Fringe Area Report, which serves as a guide for future growth planning for the Fort McMurray urban service area and also to guide discussions with the Province of Alberta for all areas related to infrastructure development and land release. This study includes recommendations on lands required for residential housing, commercial, industrial, recreation and public works (Doyle pers. comm.). Assuming a population growth rate of 12%, the population for the Fort McMurray urban service area could reach approximately 200 000 by the year 2016. Calculations show that 1 116 ha of net developable residential land is required to accommodate this additional growth based upon a residential density of 95 persons per hectare (pph) (RMWB 2009b).

As of 2009, average home prices reached \$630 000. The recent government decision to spend \$241M over five years to develop neighbourhoods for 44 000 residents will decrease average home prices in Fort McMurray and reduce the current pressure on housing. The new lots will be available in about two years. Between 1 350 and 2 000 homes will be built each year in Fort McMurray. The need to develop Crown land in the Parsons Creek and Saline Creek Plateau areas was identified as part of the provincial government's overall community development plan for Fort McMurray.

The 800 ha Parsons Creek parcel at the north edge of Fort McMurray will be developed in phases, with the first 180 ha to include lots for 2 000 homes and 6 500 residents. Eventually the neighbourhood could house 24 000 residents. A full 20% of the homes in phase one will be designated as affordable housing, with rents at least 10% below market rate. The 900 ha Saline Creek Plateau, in the southern part of Fort McMurray, will also include commercial development and could eventually have 20 000 residents (Edmonton Journal 2009).

Utilities

Electric power is supplied locally by ATCO Electric and natural gas by ATCO Gas. Residential, commercial and industrial telephone services are provided by TELUS TeleCentre. Water supply is available from the Athabasca River and provided by the RMWB; sewage treatment is handled

by an aerated lagoon; and residential solid waste disposal is handled by the RMWB (RMWB 2008b). According to the RMWB 2006 municipal census, current municipal infrastructure requires significant upgrades to accommodate additional demands created by population growth. It has been estimated that almost \$700 million in capital expenditures will be required by 2010 (RMWB 2006).

In 2006, the Government of Alberta estimated that the water and wastewater treatment facilities were moderately over capacity while the solid waste facility was nearing capacity. The assessment forecast that by 2011, the demand for water, wastewater and solid waste facilities would exceed capacity. Accordingly, the Government of Alberta financed a recent project that includes a new \$136M water treatment plant and a new reservoir trunk line (nearing completion) that will enable the regional municipality to improve the quantity and efficiency of water delivery to the reservoir. Other plans for expansion of the wastewater treatment plant include constructing a tertiary treatment system, increasing the sizes of lagoons, and adding a biological nutrient recovery system (Government of Alberta 2007). The landfill site for solid waste disposal has been inadequate and a new landfill site has been developed and in operation for the last six months (Kahn 2009 pers. comm.).

Recent utility service development projects include the southeast regional water supply line (with a total budget of \$24M) and the wastewater treatment plant (with a total budget of \$160M). The southeast regional water supply line will provide communities in the south eastern areas of the municipality with treated water from Fort McMurray. This pipeline is approximately 35 km in length and services the Hamlet of Anzac, the FMFN, Willow Lake Provincial Park and Gregoire Lake Estates. The wastewater treatment plant will reclaim wastewater and return it to the environment with improved effluent quality. The new facility will service a population of 85 000 people with the capacity to be expanded up to a maximum population of 133 000. The project is located north of Confederation Drive off Highway 63 in Fort McMurray (RMWB 2009b). According to the Planning Department of the RMWB this project is still under development (Kahn 2009 pers. comm.).

Roads and Infrastructure

Highway 63 is the only route through the urban service area and the single route into Fort McMurray. It serves as a commuter Highway, truck route and dangerous goods route. In 2006, Highway 63 north of Fort McMurray had high traffic volumes, and was characterized by high morning and afternoon peaks. Traffic south of Fort McMurray on Highway 63 had significant peaks southbound on Thursday evenings and northbound on Sunday evenings as a result of shift changes at the major industrial projects (Government of Alberta 2006).

Traffic flows on Highway 63 have increased over the past number of years, mainly because of the industrial traffic associated with oil and gas development. The average annual daily traffic (AADT) volumes have increased significantly since 1997, with an increase on Highway 63 both south (160%) and north (180%) of Fort McMurray (EnCana 2007). According to Alberta Transportation (AT), the AADT on Highway 63 south of Highway 69 at Fort McMurray has increased from 4 950 in 2004 to 9 120 in 2008 and from 8 500 to 11 940 north of Highway 69 at Fort McMurray during the same period (AT 2009a).

Alberta Transportation has identified the need to plan for the eventual twinning of Highway 63 from Highway 55 to Highway 881. In late 2005, a team was formed to proceed with detailed planning studies to confirm the long-range function and configuration of the corridor. The corridor was divided into four sections, starting at Highway 881 and proceeding south. These studies, now completed, outline the ultimate twinned alignment and future access points to the highway. In selecting the preferred route, a number of factors were examined including: historic resource impacts, geotechnical and environmental issues, alignment constraints such as topography, utilities, river crossing sites, as well as safety and operational considerations (AT 2009b).

The Highway 63/881 Corridor is the southern gateway to Fort McMurray and the RMWB. The corridor south of Fort McMurray that extends down to the hamlet of Conklin has, in recent years, been experiencing increased pressure due to continued growth and development in the region. The Highway 63/881 Corridor Area Structure Plan addresses this future growth by looking at a number of issues, including (RMWB 2007c):

- residential;
- commercial;
- industrial;
- industrial and recreational development;
- transportation;
- aesthetics; and
- environmental protection.

The plan outlines the general land use framework for the corridor area to accommodate future growth and identifies opportunities for development. Issues and opportunities specific to the area near Conklin have been outlined and identified for future business/industrial park development, specifically the Conklin Business/Industrial Park (RMWB 2007c).

According to Alberta Transportation, the AADT on Highway 881 south of Conklin has increased from 220 in 2004 to 930 in 2008 and from 260 to 880 north of Conklin during the same period. The design capacity of Highway 881 is 7 000 to 8 000 movements/day (AT 2009a).

The Fort McMurray Airport is a full-service facility with a modern air terminal and a paved 1 830 m runway. The airport services about 42 000 flights annually and accommodates over 200 000 passengers each year. In addition to the Fort McMurray Airport, there are several current and proposed private airstrips in the region used to support oil sands operations.

Fort McMurray is served by the Athabasca Northern Railroad (ANR), a short-line operator that inter-connects with Canadian National near Boyle, Alberta (Government of Alberta 2006).

Protective Services – Fire, Emergency and RCMP

Fire and Emergency Services

There are seven separate fire departments operating within the RMWB. There is one fire department and three fire stations in Fort McMurray, including a new station in Timberlea. The Fort McMurray fire department has 150 full-time staff. The main fire station is located four blocks from the hospital, and has a helipad for medical emergencies because the hospital helipad is no longer in operation. The remaining fire departments are located in the rural areas and staffed by volunteers. The emergency response capacity of the Fort McMurray region is enhanced through a mutual aid agreement among the municipality and four industry partners, which means that the closest partner provides first response to an incident (Government of Alberta 2006).

As of 2009, the total number of full time staff and volunteers in the Fort McMurray Fire Department was 190 (140 full time staff and 50 volunteers in rural areas). While the Fort McMurray Fire Department has sufficient equipment and budget, staff retention is a major issue due to high housing prices. Although the work load has not increased dramatically with recent oil sands projects, traffic volume has gone up and so has the number of traffic accidents (Klien 2009 pers. comm.).

RCMP

In 2006, crime rates in the RMWB (urban and rural) were in the mid to high range for Alberta, with higher rates of motor vehicle collision deaths and many more impaired driving deaths than the Alberta averages. The crime rate for urban Fort McMurray was 142 criminal cases per 1 000 population. The crime rate for the RMWB (rural communities) was 101 cases per 1 000 population. In terms of service levels, the number of RCMP officers per population in the RMWB is similar to the Alberta average (Government of Alberta 2006).

There are 119 RCMP members in the RMWB, excluding the Fort Chipewyan detachment. The urban services area of Fort McMurray has 98 RCMP members. The rural area, under provincial responsibility, has 16 RCMP members. The rural service area also has three First Nations positions, one identification (i.e., fingerprinting) position, and one traffic analyst position (Government of Alberta 2006). The total number of persons per police officer in Fort McMurray (urban) is 779 and in the RMWB (rural area) it is 197. The Fort McMurray RCMP detachment is a busy detachment and an ongoing challenge of the detachment is recruitment and retention of staff. This is largely attributed to the high cost of living and lack of affordable housing in the Fort McMurray.

A new head office for the Fort McMurray RCMP detachment is now in operation, with the initial cost estimates for the facility being \$30M. These costs increased to around \$50M (Government of Alberta 2006).

Health

As of 1 April 2009, the former Northern Lights Health Region and 11 other provincial health authorities have joined together to form Alberta Health Services (AHS). Information included in this section on the capacity before the merger with Alberta Health was collected from the former Northern Lights Regional Health Centre website. Post-merger information was collected from key personnel in the Northern Lights Health Centre in Fort McMurray and from AHS website.

The former Northern Lights Health Region is fully equipped, with 24-hour emergency care, an intensive care unit, full surgical services, a radiology unit and a medical laboratory. The centre offers a variety of health support programs, and has 92 acute beds, 30 continuing care beds and 1 respite bed. The jurisdiction of the health centre includes the entire northern region of Alberta. It serves about 100 000 people living in an area covering 192 500 km² (RMWB 2003).

In addition to health services provided by the centre, the municipality's Family and Community Support Services provides or sponsors a number of essential services such as the Seniors Outreach Program, confidential counselling services and mediation for families. Other health services related to mental health are provided by non-profit health and crisis agencies, including the Canadian Mental Health Association, Unity House, Some Other Solutions and the Association for Community Living funded by various partnerships (RMWB 2003).

Before the merger, for 16 of 17 health indicators, health services delivered in Fort McMurray were rated lower than the provincial average. Specifically, there are no community health facilities or continuing care facilities, the number of acute care beds is lower than the provincial average, and there are significantly fewer specialists. The region has the lowest ratio of doctors to patients in all of Alberta, and the area was short 15 general practitioners in 2006 (which is expected to increase to 50 by 2011) (Government of Alberta 2006).

After the merger, the Northern Lights Regional Health Centre in Fort McMurray became the Northern Lights Health Centre (NLHC) that offers both acute care and continuing care. Services provided include 24-hour emergency, laboratory, X-Ray, mental health, general surgery, ambulatory care, rehabilitation, home care, speech language, and community health. The jurisdiction of the centre includes the RMWB. Alberta Health recognized that there is a shortage for health services in the municipality of wood buffalo and that the allocated budget does not match with the actual population in the RMWB (residents + workers) and is based on census data only that don't count workers in camps although those workers use the services during their stay in the camps. The major challenge to expand the health services in the NLHC is attracting workers due to high living costs and short of housing. The Government of Alberta added 15 physicians to the centre and the centre is trying to establish an ongoing process to attract more physicians such as the Family Practitioner Learning Centre and communicating with the industry about health care issues and the need for additional health care (Innes 2009 pers. comm.).

Currently, the centre is operating at or near capacity and receives 70 000 patients/year at the emergency department. There are no stats on the percentages of workers vs. residents that the emergency centre receives annually, however a big portion of this 70 000 patients represent industry workers. The government of Alberta recognizes that lack of specialists and clinic working hours lead lots of patients to go to the emergency department as there are no other health services. In order to release the pressure on the emergency department of the NLHC, the centre needs to expand its services through adding four Health and Wellness Centers each with a capacity of 20 000 patients/year. Alberta Health might announce one of those centres by December 2009. Northern Lights Health Foundation is a leadership organization for supporting AHS in the RMWB. It is the official fundraising organization to support AHS in the RMWB. The foundation came with a concept for oil sands developers that says: 1 Cent/Barrel as a way to manage participation and receive recognition as contributors to the local health authority (Innes 2009 pers. comm.).

Common health conditions in the RMWB include alcohol and substance abuse related problems such as traffic accidents, domestic violence and depression. After the emergence of oil sands industry and the arrival of younger population as construction and operation workers there was an increase in the number of smokers and an obvious increase in alcohol and drugs use among younger population. Health issues resulting from social problems included domestic violence and loneliness and depression due to long working hours and poor diet specifically lack of vitamin D (Innes 2009 pers. comm.).

The former emergencies/disasters preparedness department is now known as the Regional Emergency Preparedness Department (REPD) of AHS in the Northern Zone. Oil sands developers normally send a copy of their emergency preparedness plan for review and approval, and engage the REPD during accidents and coordinate with them. With the merger, the REPD will be contracted by AHS for two years to provide ambulance services locally (ambulance services to the hospital), and after the two years, AHS will manage emergency services in the RMWB directly. At this time, ambulance services will move to the hospital and other emergency services will be managed and operated by the municipalities (fire departments and hazardous material response) (Watts 2009 pers. comm.).

Governance

The RMWB is governed by a mayor and ten elected councillors. The Council develops policies, adopts bylaws or resolutions based on these policies and then ensures that they are executed by the administration. The *Municipal Government Act* provides that Council can only exercise its power of the municipal corporation in the proper form, either by bylaw or resolution passed at a regular or special meeting when a quorum is present. In addition, all these decisions must be made in public. The municipal government consists of four wards:

- *Ward 1* – Fort McMurray;
- *Ward 2* – Fort Chipewyan, Fort McKay and Fort Fitzgerald;
- *Ward 3* – Saprae Creek Estates and Draper; and
- *Ward 4* – Anzac, Conklin, Gregoire Lake Estates, Janvier (Chard) and Mariana Lake (RMWB 2008a).

There are two major financial risks facing the RMWB. The first relates to the need for infrastructure required to support oil sands development well in advance of revenues generated by property taxes from these major projects. The revenues received by the RMWB for oil sands projects are based primarily on machinery and equipment assessments. Taxes are not collected until the projects start production and, in the case of mining projects, this could take anywhere from three to five years. Significant delays or cancellation of projects severely affects the municipality's ability to service a large debt load. The other financial risk is the high level of debt carried by the regional municipality (Government of Alberta 2006).

17.5.1.2 Rural Communities South of Fort McMurray

Mariana Lake

Mariana Lake is situated 100 km south of Fort McMurray on Highway 63. Although this community has a small permanent population (nine residents in 2007), it plays an important role in serving visitors to the region through its local restaurant, service station and camp/lodge. There is no rail or bus service, and the nearest airport is in Fort McMurray (RMWB 2008b).

Housing includes single-family homes and a multi-unit camp/lodge for guests. Utility services include: electric power and natural gas (ATCO), telephone (Telus), water supply from individual wells, sewage disposal through individual septic systems and a landfill site 2 km from the community (RMWB 2008b).

Health care services and emergency services, including fire, ambulance and police services, are supplied from Fort McMurray. Provincial newspapers are available, radio transmission can be received from Fort McMurray and Edmonton stations, and TV reception is by satellite dish (RMWB 2008b).

Draper

Draper is located southeast of Fort McMurray, via the community of Waterways. It is known for its small agricultural pursuits and very active market gardens. As of 2007, Draper had a population of 185 residents. Some of the Draper population lives on the north side of the Clearwater River, which they cross by boat in the summer and in vehicles during the winter when the river is frozen over. Draper residents travel to Fort McMurray for essential goods and services (RMWB 2008c).

Saprae Creek Estates

Saprae Creek Estates is located 25 km southeast of Fort McMurray, built at the crest of the Clearwater River valley. Since its establishment in 1987, the community has grown steadily, with a population of 737 in 2007. There is no bus or rail service to or from the community, but it is located a short distance from the Fort McMurray Airport. The main access is by the paved Highway 69 southeast of Highway 63. There are no commercial facilities in this bedroom community, and residents are primarily employed directly or indirectly by the oil and gas industry. Other residents work in government services, such as health, education and social services in Fort McMurray (RMWB 2008b).

Housing ranges from mobile homes to estate houses, and most available lots are developed. Electric and natural gas utilities are supplied by ATCO, telephone service by Telus, potable water is from the RMWB via pipeline from a central reservoir, sewage disposal is by individual septic tank systems, and a weekly solid waste disposal service is provided by the regional municipality. Emergency, health and education services are all available from Fort McMurray.

Gregoire Lake Estates

Gregoire Lake Estates is a country residential subdivision community located 32 km southeast of Fort McMurray on Highway 881. It had a population of 248 residents in 2007. There were no commercial developments at that time. Goods and services are purchased from nearby Anzac or Fort McMurray. As a small bedroom community, health and emergency services, including fire, police and ambulance, are supplied by Fort McMurray, with the Anzac Volunteer Department assisting with fire protection when needed. There is no public transportation and no schools in the community. Elementary students are bussed to Anzac and secondary students to Fort McMurray (RMWB 2008c).

There are 85 lots in the community, all developed with dwellings ranging from summer cottages to contemporary homes. Utility services are all available: electric power and natural gas (ATCO), telephone (Telus), and both potable water delivery and sewage disposal (from septic tank systems and holding tanks) is provided by private contractors. There is weekly residential waste pick-up by the RMWB, along with a recycling program (RMWB 2008b).

Anzac

Anzac is situated 45 km southeast of Fort McMurray. It is a rural community, with 714 residents in 2007. The community has access via paved Highway 881 and Highway 63. It has a local volunteer fire department that serves Anzac and Gregoire Lake Estates, while other community services, including ambulance, police, health and seniors' services, are all provided from Fort McMurray. Anzac has a local elementary school (operated by the Northland School Division) that offers Kindergarten to Grade 6. Older students attend middle and secondary schools in Fort McMurray by bus (RMWB 2008c).

Anzac's economic base is closely tied to Fort McMurray, and the oil sands extraction and industrial plants to the north of the city. Most residents earn their living from oil sands mining, government, education, health and the social professions. Others are seasonally employed in forestry and oil exploration.

Utilities are provided by ATCO Electric, ATCO Gas and Telus Corporation. Water is distributed by a hauling contractor. A municipal water treatment plant, sewage lagoon and weekly garbage pick-up system are in place in the community. The community has both radio and TV service, and daily newspapers.

Most residents live in single-family homes or mobile homes. In 1999, two residential subdivisions containing 81 lots were developed in order to accommodate the community's steady growth. There is also an inn and restaurant for visitors. Most residents drive to Fort McMurray for essential goods and services (RMWB 2008b).

17.5.1.3 Lac La Biche County

As of 1 August 2007, Lakeland County and the Town of Lac La Biche amalgamated, resulting in Lac La Biche County. Census data for Lac La Biche County is not yet available, but the 2006 Statistics Canada census provides information at the level of the Town of Lac La Biche and Lakeland County (Municipal District). In the following section, census data are provided in this format and other baseline information, after the amalgamation is provided, if available, it will be at the level of Lac La Biche County.

Demography

According to the Statistics Canada, in 2001 there were 2 776 people in the Town of Lac La Biche and 5 306 in Lakeland County; in 2006 there were 2 758 in the Town of Lac La Biche and 6 365 in Lakeland County. The population change for 2001 to 2006 was -6% in the Town of Lac La Biche and +20% in Lakeland County (Statistics Canada 2001b, 2006b). The population change in the Town of Lac La Biche was significantly lower than the provincial average, while the population change in Lakeland County was above the provincial average (Table 17.5-5).

Table 17.5-5: Populations in the Town of Lac La Biche and Lakeland County

| Area | Town of Lac La Biche | Lakeland County | Alberta |
|--------------------|-------------------------|--------------------|-----------|
| Population in 2001 | 2 776 | 5 306 | 2 974 807 |
| Population in 2006 | 2 758 | 6 365 | 3 290 350 |
| Population change | -0.6% | +20.0% | +10.6% |

Source: Statistics Canada (2001b, 2006b).

According to Lac La Biche County, the county has doubled in size during the last ten years and has a potential for more expansion and a fairly good budget. Lac La Biche residents are divided into two categories, older people who are against expansion and would prefer to see it as a retirement community and younger residents who prefer the expansion as it could bring improvements in the local services. Within the next five years, the population is expected to increase from 10 000 to 16 000. This assumption is based on current growth in the area as a direct result of oil sands development (Kolenosky 2009 pers. comm.).

Economy

The main industries in the new amalgamated Lac La Biche County include oil and gas, timber harvesting, agriculture (farm and ranch), tourism and recreation. Construction is also a major industry, with agricultural, residential and various oilfield construction occurring. As of 2003, development applications totaled just over \$14M, with \$8.8M being primarily residential and \$5.4M being commercial and oil field facilities construction. Agriculture is also a major industry in the county, with over 13% of the area's population operating farms. Following agriculture, the oil and natural gas industry plays an intricate part in Lakeland County's economy, with 11.6% of the eligible population employed in the industry. Alberta-Pacific Forest Industries (AIPac), the world's largest single-line kraft pulp mill, is located 75 km northwest of Lac La Biche and is the region's largest employer, producing 560 000 tonnes of pulp annually (Alberta First 2008).

In 2006, in the Town of Lac La Biche, with a community of 2 758, the total experienced labour force was 1 420 people (15.5% in wholesale and retail trade, 14.7% in manufacturing and construction, 18.3% in health and education, 8.8% in agriculture and other resource-based industries, 11.6% in business services, 3.1% in finance and real estate, and 27.1% in other services) (Statistics Canada 2006b).

Earnings statistics show that 56.2% of people 15 years and over in the Town of Lac la Biche have earnings compared to 62.5% in Alberta. The median earnings were \$24 753 in the Town of Lac La Biche and \$29 738 in Alberta. Income statistics suggest that the percentage of people 15 years and over with income in the Town of Lac La Biche is 71.2% and in Alberta is 76.4%. The median income is different, however, with almost \$22 197 in the Town of Lac La Biche and \$28 896 in Alberta. Earnings as a percentage of total income are 79.9% in the Town of Lac La Biche, compared to 82.3% in Alberta. [Table 17.5-6](#) provides a comparison between labour force indicators in the Town of Lac La Biche, Lakeland County and Alberta as a whole in 2006 (Statistics Canada 2006b).

Table 17.5-6: Economic Indicators in the Town of Lac la Biche, Lakeland County and Alberta (2006)

| Economic Indicator | Town of Lac La Biche | Lakeland County | Alberta |
|---|----------------------|-----------------|---------|
| Labour Force | | | |
| Labour force participation rate (%) | 70.6 | 71.2 | 74.0 |
| Employment rate (%) | 67.7 | 67.8 | 70.9 |
| Unemployment rate (%) | 4.2 | 4.8 | 4.3 |
| Percent employed full time (%) | 95.8 | 95.2 | 95.7 |
| Average earnings (\$) (2000) | 29 626 | 27 695 | 32 603 |
| Industry | | | |
| Agriculture/other resource-based industries (%) | 8.8 | 23.3 | 11.8 |
| Manufacturing and construction industries (%) | 14.7 | 15.3 | 15.9 |
| Wholesale and retail trade (%) | 15.5 | 10.2 | 15.1 |
| Finance and real estate (%) | 3.1 | 2.3 | 5.0 |
| Health and education (%) | 18.3 | 18.6 | 15.3 |
| Business services (%) | 11.6 | 13.9 | 18.3 |
| Other services (%) | 27.1 | 16.4 | 18.2 |
| Earnings and Income | | | |
| Persons 15 years and older with earnings (%) | 56.2 | 60.8 | 62.5 |
| Median earnings persons 15 years and older (\$) | 24 753 | 26 110 | 29 738 |
| Persons 15 years and older with income (%) | 71.2 | 72.03 | 76.4 |
| Median income persons 15 years and older (\$) | 22 197 | 25 515 | 28 896 |
| Composition of Total Income (100)% | | | |
| Earnings as % of total income | 79.9 | 83.1 | 82.3 |
| Government transfer as % of total income | 13.2 | 11.2 | 7.2 |
| Other money as a % of total income | 6.9 | 5.7 | 10.6 |

Notes:

Rates are for experienced labour forced aged 15 years and older.

Source: Statistics Canada 2006b.

Before the amalgamation, in Lakeland County (population of 6 365 in 2006) the total experienced labour force was 3 430 people (23.3% in agriculture and other resource-based industries, 18.6% in health and education, 15.3% in manufacturing and construction, 13.9% in business services, 10.2% in wholesale and retail trade, 2.3% in finance and real estate, and 16.4% in other services) (Statistics Canada 2006b).

Earnings statistics show that 60.8% of people 15 years and over in the Lakeland County have earnings compared to 62.5% in Alberta. The median earnings were \$26 110 in Lakeland County and \$29 738 in Alberta. Income statistics suggest that the percentage of people 15 years and over with income in Lakeland County is 72.03% and in Alberta is 76.4%. The median income is different, however, and is almost \$25 515 in the Lakeland County and \$28 896 in Alberta. Earnings as a percentage of total income are 83.1% in Lakeland County compared to 82.3% in Alberta.

As of September 2009, and according to Lac La Biche County, the recession during the last year did not affect Lac La Biche. There was no loss of jobs due to different oil sands development in the area, housing prices were not affected and Portage College got more enquiries for training, particularly for health and safety courses that were being promoted by the government. The County is in the process of building a Multiplex Educational Facility that will offer numerous recreation and leisure opportunities under one roof. The Northern Lights School division will attach a new 800 student capacity High School and an 800 student capacity elementary School into the Multiplex making a cost effective partnership to serve Lac La Biche residents and which may attract younger families to move in. The estimated construction cost of the Multiplex is \$55.3M with \$70M more for the schools. Funding is available from Provincial and Federal grants, reserves, land sales, fundraising and debenture financing.

The county has plans to update the lake shore and add a marina with parks using funds collected from the county's taxes and royalties. Lac La Biche County is short of staff as it is hard to attract workers, particularly managers and sub-managers. The county posts jobs more than once and sometimes hires from the United States when workers are not available in the local labour force or cannot be attracted. The recent economic recession helped the county to hire people for the Multiplex project at a more reasonable cost (Kolenosky pers. comm.).

Even in an economic downturn, Lac la Biche County is in a strong financial position and has the capacity to proceed with the Multiplex Educational Facility. The timing of the project is positive as the cost of construction projects is favourable and, most importantly, the funding sources are available to finance this project particularly through a dedicated portion of the existing non-residential tax and Municipal Sustainability Initiative (MSI) capital funding (Nicholas Applied Management 2008).

Education

There are 10 public schools in Lac La Biche County, run by the Northern Lights School Division and offering provincially certified instruction for Kindergarten to Grade 12. The schools have seen continuous growth of 3% per annum between 2003 and 2008. This growth has been accompanied by substantial upgrades of facilities and curriculum expansion to include language training in French, Arabic, Cree and Russian (Alberta First 2008).

Currently, the total number of teachers and support staff within Lac La Biche School Area (Lac La Biche and the surrounding 25 minute driving ratio) is 200 (100 teachers and 100 support staff), the division has enough resources and staff retention is not a major issue. The division is not running at its maximum capacity and could easily accommodate 100 more students. Currently, the division is working with the provincial government to build two additional 800-student schools to accommodate the needs of potentially upcoming projects in the area (Taylor 2009 pers. comm.).

For post-secondary education, Portage College offers seven different areas of study with over 30 different certificates and diplomas ranging from career programs, trades and technical, and academic upgrading. Major fields of study include business, university studies, human services, health and wellness, Aboriginal arts and culture, trades and technical, and academic upgrading (Alberta First 2008).

In 2009, the number of applications at Portage College increased by 19% over the year 2008, with a total of 1 258 prospective students applying for programs at the college. The number of students who have been accepted into college programs also increased (by 17%). Although the economy is not as robust as it has been in the past few years, other causes can be attributed to a spike in applications and acceptances. Dr. Trent Keough, Vice President, Academic, states that the increase in program choices is certainly part of the reason. He adds that the college is now offering more modes of program delivery that include face-to-face instruction, and video conferencing and online training, allowing much more flexibility and convenience for the students. The numbers are expected to rise even more, as application numbers spiked historically in late July (Portage College 2009).

In the Town of Lac La Biche, the total population 15 years and over was 2 025 in 2006. Of this population, 33.3% had no certificate or diploma, 21.2% had a high school certificate, 9.3% had a trades certificate or diploma, 15.3% had a college certificate and 20.5% had a university certificate or diploma. In Lakeland County, the total population 15 years and over was 4 825. Of this population, 38.4% had no certificate or diploma, 21.0% had a high school certificate, 14.7% had a trades certificate or diploma, 16.2% had a college certificate and 9.7% had a university certificate or diploma (Statistics Canada 2006b).

The population percentages in the Town of Lac La Biche and Lakeland County without a certificate or diploma were higher than the provincial average of 23.4%, and percentages of people with a high school or college certificate close to the provincial averages of 21.4% and 17.9%, respectively. Lakeland County had a higher percentage of people with a trades certificate or diploma than the provincial average (10.8%) and a lower percentage of people with a university certificate or diploma than the provincial average (21.5%).

Infrastructure – Housing, Utilities, Roads and Transportation

Housing

Before the amalgamation, the Town of Lac La Biche and Lakeland County were each responsible for planning, developing and issuing building permits within their respective municipalities. The pressure for new housing in both the Town of Lac La Biche and Lakeland County was a concern for both municipalities. The town had a limited amount of land suitable for development and there was a need to annex land from the county. Through the amalgamation, it is believed that all issues relating to inter-municipal planning and annexations will be eliminated (Austrom 2007). As of 2007, there were 100 housing lots in the Town of Lac La Biche and 700 new lots in the rest of the county. The average price for a new home was \$350 000 to \$370 000 while the average price of an existing house was \$300 000 (Matrix Solutions 2008).

Housing prices in Lac La Biche County went up in 2008 and down in 2009 to a level similar to 2007 prices. Most of the demand for houses is created by Fort McMurray operation workers who bring their families with them and decide to buy in Lac La Biche instead of Fort McMurray. There are enough houses to support the growing demand, and residential lots are also available for expansion. Developers are available and waiting for the demand to grow. As of August 2009 there were 244 properties for sale within a 30 minute driving ratio and an additional 10% that were not in the listings (Piquette 2009 pers. comm.).

Utilities

Before the amalgamation, utility services were provided by Lakeland County and private companies. Electricity was provided by Electric Power, natural gas was provided by Lac La Biche & District Natural Gas Co-op, and waste management was accomplished through various landfill sites. The Town of Lac La Biche operates the Beaver Lake Modified Class II Landfill and provides residential waste collection through a private contractor that bills the town for the service. The Town of Lac La Biche and Lakeland County jointly own the water treatment facility, with the town operating the facility (Austrom 2007).

After the amalgamation, Lac La Biche County began piping water to various subdivisions and is in the process of building a new water treatment plant (with a bigger capacity) to replace the current one. The county is also building a wastewater treatment plant at a cost of \$21M, with \$7M coming from the province and the rest from the county. The new wastewater treatment plant will be built to answer the growth of 16 000 people in Lac La Biche County. Lac La Biche County operates seven landfills with recycling at early stages. Those landfills are reaching their maximum capacity and the county is looking at collection systems and a municipal (regional) landfill (Kolenosky 2009 pers. comm.).

Roads and Transportation

Lac La Biche County has a network of primary highways and secondary roads that provide access to and within the region. Many routes are used extensively by industrial and commercial traffic, as well as tourists. Air service is also available, with an all-weather airport located approximately 2 km west of the Town of Lac La Biche on Highway 55, which includes a 1 765 m paved and lighted runway. In addition, there is a fixed-wing and helicopter charter service, an Alberta Forestry air tanker base, and air ambulance services available. Given the geographical location of Lac La Biche between Edmonton and Fort McMurray, freight services are available on a daily basis, as well as railway services through Athabasca Northern and bus services through Greyhound (Alberta First 2008).

Highways 36 and 55 connect Lac La Biche to major arterial Highways to the south while the recently-paved Highway 881 connects Lac La Biche to Fort McMurray. Highway 881 is one of only two highways that go to Fort McMurray, and the only highway that runs through the emerging oil sands development areas near Conklin and Janvier (Lac La Biche County 2008). Alberta Transportation has a maintenance office in Lac La Biche, which is responsible for the maintenance of Highway 881. All other issues, including access, are dealt with by the Alberta Transportation Athabasca Office. During the last two years, there has been an additional increase in traffic accidents due to the increase in traffic volumes on Highway 881 (Kissel 2009 pers. comm.).

Currently, Lac La Biche County has plans to expand the local airport. The county has already done some re-paving and is in the process of developing concept plan. The plan will discuss the possibilities of including commercial/industrial office development at the airport. This plan will be announced in 2010. The airport needs upgrading to meet regional demands, as well as to address safety issues with the current facility. The county is planning to apply for funds from the Provincial Government for the airport expansion (Kolenosky 2009 pers. comm.).

Protective Services – Fire, Emergency and RCMP

Fire and Emergency Services

Lac La Biche County has five volunteer fire departments that serve the region. The fire departments are located in Lac La Biche, Hylo, Owl River, Rich Lake and Plamondon. The Lac La Biche Fire Department has ten members, a rescue van with jaws of life, three pumper trucks and one suburban. Ambulance services, including air ambulance, are also available through Lac La Biche regional emergency medical services (EMS) (Alberta First 2008).

The Town of Lac La Biche and Lakeland County have cooperated on fire protection for many years, and entered into a fire protection agreement for the town volunteer fire department to provide fire protection services to the Fire District surrounding the Town of Lac La Biche. The county also shares in the cost of operating the hall, and covers a portion of the Fire Chief expenses and fire department training (Austrom 2007).

Sustainable Resources Development has an office in Lac La Biche that is responsible for the Lac La Biche fire protection area. As of September 2009 the office had 150 fire fighters and 30 support staff. During big fire events the office covers the demand during the fire season (1 April to 31 October) by seeking help through the resources sharing agreement with other provinces, the United States and sometimes with Mexico. This office works with developers in the fire protection area to ensure that their construction and operation camps are 'fire smart'. The office coordinates with developers on the timing of construction activity to avoid the fire season (building during the winter, if possible) and keeps all developers informed about fires in the area (Lozinski 2009 pers. comm.).

RCMP

The RCMP Detachment at Lac La Biche serves Lakeland County, the Town of Lac La Biche, the Hamlet of Plamondon and the surrounding area (Alberta First 2008).

Up until April 2004, the Town of Lac La Biche was paying approximately \$500 000 per year for policing, including two support staff at the detachment. Through to 2004, the detachment was also divided between rural and urban components. Upon the municipal amalgamation, the detachment became a rural detachment and was funded under the Provincial Policing Agreement. In addition to the services provided by the RCMP, Lac La Biche County employs one special constable, who is authorized to patrol the "three-number" Highways and local roads within the County. The special constable is able to enforce all matters under the *Motor Vehicle and Highway Act*, plus the *Gaming and Liquor Act*, *Environmental Protection and Enhancement Act*, *Traffic Safety Act*, *Use of Highways and Roads Regulations*, and *Off Highway Vehicle Bylaws* (Austrom 2007).

Currently, Lac La Biche RCMP consists of 20 regular staff, five full time support staff and two part time support staff. Given the population and the associated policing demands within the jurisdiction the detachment is currently under staffed. As is the case in Fort McMurray RCMP detachment, this situation is compounded by difficulty in recruitment and retention of RCMP officers for the detachment in Lac La Biche (Sutherland 2009 pers. comm.).

Lac La Biche has the reputation of being rough and busy with the recent oil sands development in the area and growing number of tourists. Oil sands developments generate high traffic volumes on Highway 63 especially on Thursdays and Sundays when workers travel to and from home for the weekend. The high traffic volume has been accompanied by a high vehicle accident rate to which the RCMP must respond. Last year there were 22 fatalities on Highway 63. The high traffic volumes and accidents on Highway 63, has resulted in some change to traffic patterns. There has been an increase in motor vehicle traffic using the newly paved Highway 881 at the end of the week when workers are driving to and from their primary residents outside the RMWB. Along with the increase in traffic there has been an increase in motor vehicle accidents on Highway 881 (Sutherland pers. comm.).

In 2008 the Lac La Biche RCMP reported a total of 1 166 criminal charges. The highest occurrence rates for all violations were traffic-related offences (295 or 25%) and about half of these were speeding violations. Alcohol offences accounted for about 10% of the charges.

Health

As of 1 April 2009, the former Aspen Regional Health and 11 other provincial health authorities joined together to form the AHS. Information included in the paragraphs below was collected from the former Aspen Regional Health website and relates to the capacity of the health centre in Lac La Biche before the merger with Alberta Health. Post merger information is not yet available.

Before the merger, personal and family health care needs of Lac La Biche County residents were met by the William J. Cadzow Community Health Centre of Aspen Regional Health. The centre is equipped with up-to-date medical equipment and is staffed by well-trained professionals. The facility also houses an extended care unit with rehabilitation services. As of 2009, the centre included 23 hospital beds, 42 seniors beds for long time care, one medical clinic with ten doctors, two dental clinics, four pharmacists, one optometrist, two chiropractors, and ground and air ambulances. In addition to the centre, there are two fully equipped medical clinics, three dental clinics as well as, psychologists, chiropractors and optometrists in the Town of Lac La Biche (Lac La Biche County 2008).

The centre currently has enough capacity to cover the demands of the local population and occasionally receives some patients from Fort McMurray. During the last two years the centre treated many patients from pipeline and exploratory drilling projects in the area. At one point the centre received 1 000/year patients from projects in the area. Most developers would have a first aid centre to treat minor injuries and more urgent cases, which could not be treated in the first aid centre and yet were not considered emergencies, would be brought to the emergency department at the centre. Lack of extended hours of physicians' offices in Lac La Biche resulted in the arrival of those cases to the emergency centre. Although they are not emergency cases. they are populating the emergency centre.

The centre sends more complicated cases to Royal Alexandra Hospital in Edmonton. Here, a door-to-door air medical evacuation service is available that requires an average 45 minutes per trip. The centre has enough doctors, but is short of full time nurses. The centre offers furnished accommodation for new nurses until they find their own accommodation and housing affordability does not seem to be an issue in Lac La Biche. The centre also accepts students for training from various colleges. In conclusion, the current capacity of the centre is enough to cover the local demand, but if the permanent population increases, the centre will have to increase the capacity of some services (Moehrle 2009 pers. comm.).

Governance

Lac La Biche was incorporated as a village in July 1919 and on 15 January 1950, it became the Town of Lac La Biche. The Lac La Biche Council consists of six councillors and a mayor. Lakeland County was formed on 15 July 1998 from areas separated from the Municipal District

of Bonnyville. On 31 May 2002, the Village of Plamondon dissolved to become part of Lakeland County. Initially the Lakeland County Council consisted of four councillors, with the reeve elected at large. In 2004, six divisions were created, with the reeve elected at large. Prior to 1998, the area that became Lakeland County was part of Improvement District 18 South, which was annexed by the Municipal District of Bonnyville in 1995. In August 2007, Lakeland County and the Town of Lac La Biche amalgamated, resulting in Lac La Biche County.

Several provincial government departments have offices in Lac La Biche, including Employment and Immigration, Children and Youth Services, Agriculture and Rural Development, Public Lands Division of Alberta Sustainable Resource Development, Alberta Environmental Protection, Alberta Alcohol & Drug Use Commission, Alberta Mental Health Board, Community Corrections and the former Lakeland Regional Health Authority.

Federal departments with offices in Lac La Biche include Canada Employment, Canada Post and INAC (Alberta First 2008).

17.5.1.4 Aboriginal Profile

The following paragraphs include a brief description of Aboriginal socio-economic conditions in the RSA, as well as a description of First Nations with reserves.

Demography

According to the Statistics Canada Aboriginal census, in 2001 there were 5 130 people of Aboriginal identity residing in the RMWB and in 2006 there were 5 365 (Statistics Canada 2001a, 2006a). These figures include Aboriginal people living on and off reserves (in Fort McMurray and other rural communities in the RMWB). This represents almost 12% of the regional population. According to INAC, as of July 2007 the resident Aboriginal population in the RMWB was 5 187. The majority of them (63%) lived off reserves, 21% lived on reserves and the balance (16%) lived on Crown land (INAC 2009).

In 2006, there were 925 people of Aboriginal identity residing in the Town of Lac La Biche and 1 335 residing in Lakeland County (Statistics Canada 2006a).

Economy

The 2006 census shows that of 5 365 people of Aboriginal identity in the RMWB, the total experienced labour force 15 years and over was 3 035 people (33.9% in agriculture and other resource-based industries, 13.5% in manufacturing and construction, 9.2% in wholesale and retail trade, 2.8% Finance and real estate, 7.9% in health and education, 12.7% in business services, and 20.0% in other services).

Earnings statistics show that 83% of Aboriginal people 15 years and over have earnings in the RMWB, compared to 71.2% in Alberta Aboriginal population. The median earnings were \$44 491 and \$21 010 in the RMWB and Alberta, respectively. Income statistics suggest that the percentage of Aboriginal people 15 years and over with income in the RMWB is 95.3%,

compared to 93.3% in Alberta as a whole. The median income is very different: \$38 322 in the RMWB and \$18 335 in Alberta. Earnings as a percentage of total income are 94.2% in the RMWB, compared to 82.9% in Alberta. [Table 17.5-7](#) provides a comparison between labour force indicators for Aboriginal people in the RMWB and Alberta as a whole in 2006.

Table 17.5-7: Economic Indicators for the Aboriginal Population in the Regional Municipality of Wood Buffalo, Lac La Biche County and Alberta (2006)

| Economic Indicator | RMWB | Lac La Biche County | | Alberta Aboriginal Population |
|---|--------|----------------------|-----------------|-------------------------------|
| | | Town of Lac La Biche | Lakeland County | |
| Labour Force | | | | |
| Labour force participation rate (%) | 76.0 | 69.4 | 63.2 | 68.3 |
| Employment rate (%) | 69.9 | 66.9 | 59.7 | 60.8 |
| Unemployment rate (%) | 7.9 | 3.5 | 4.7 | 11.1 |
| Industry | | | | |
| Agriculture/other resource-based industries (%) | 33.9 | 7.0 | 19.7 | 5.05 |
| Manufacturing and construction industries (%) | 13.5 | 19.7 | 21.2 | 7.2 |
| Wholesale and retail trade (%) | 9.2 | 7.0 | 12.6 | 15.8 |
| Finance and real estate (%) | 2.8 | 2.3 | 3.1 | 4.0 |
| Health and education (%) | 7.9 | 9.3 | 13.4 | 23.9 |
| Business services (%) | 12.7 | 16.2 | 21.2 | 13.4 |
| Other services (%) | 20.0 | 37.2 | 10.2 | 30.4 |
| Earnings and Income | | | | |
| Persons 15 years and older with earnings (%) | 83 | 68.8 | 74.1 | 71.2 |
| Median earnings persons 15 years and older (\$) | 44 491 | 13 869 | 20 683 | 21 010 |
| Persons 15 years and older with income (%) | 95.3 | 94.4 | 95.5 | 93.3 |
| Median income persons 15 years and older (\$) | 38 322 | 15 582 | 20 112 | 18 335 |
| Composition of Total Income (100)% | | | | |
| Earnings as % of total income | 94.2 | 71.8 | 80.2 | 82.9 |
| Government transfer as % of total income | 4.4 | 25.2 | 17.4 | 13.2 |
| Other money as a % of total income | 1.3 | 2.7 | 3.1 | 3.9 |

Notes:

Rates are for experienced labour forced aged 15 years and older.

Source: Statistics Canada (2006a).

The 2006 census shows that the Aboriginal labour force participation rate was 69.4% in the Town of Lac La Biche. This is higher than the participation rate in Lakeland County (63.2%) and the provincial average (68.3%). In terms of earnings, the Town of Lac La Biche reported lower average earnings (\$13 869) than Lakeland County (\$20 683), and the average earnings in Lakeland County are close to the provincial average (\$21 010). As for income, the average income was \$15 582 in the Town of Lac La Biche and \$20 112 in Lakeland County. Aboriginal people in the Town of Lac La Biche were more reliant on government transfers (25.2%) than the average Aboriginal person in Lakeland County (17.4%) and in Alberta (13.2%).

As for employment by industry, agriculture and other resource-based industries employed 7.0% of the Aboriginal labour force in the Town of Lac La Biche and 19.7% in Lakeland County, significantly higher than the provincial average (5.0%). In the Town of Lac La Biche, the other two major industries were other services (37.2%), and manufacturing and construction (19.7%). In Lakeland County they were manufacturing and construction (21.2%), and business services (21.2%).

Education

In the RMWB, the total Aboriginal population 15 years and over was 4 065 people in 2006 (Table 17.5-8). Of that total, 33% had no certificate, diploma or degree, which is higher than the provincial average of 44.3%. Almost 26% had a high school graduation certificate, which is higher than the provincial average of 21.3%. The percentage of people with a trades, college or other non-university diploma was 35.1%, which is lower than the provincial average of 26.7%. Finally, the percentage of people with a university certificate or diploma below the bachelor level, university certificate or degree is close to the provincial average (5.8% in the RMWB and 7.6% in Alberta) (Statistics Canada 2006a). Major fields of study for the Aboriginal population in the RMWB include the following:

- architecture, engineering, and related technologies (46%);
- business, management and public administration (15.8%);
- health, parks, recreation and fitness (9.3%);
- personal, protective and transportation services (7.3%);
- social and behavioral sciences and law (5.3%);
- education (5%);
- mathematics, computer and information sciences and Physical and life sciences and technologies (3% each);
- humanities (2.5%); and
- agriculture, natural resources and conservation (1%).

Table 17.5-8: Education Profile for the Aboriginal Population in the Regional Municipality of Wood Buffalo, Lac La Biche County and Alberta (2006)

| Education Profile | RMWB | Lac La Biche County | | Alberta Aboriginal |
|--|-------|----------------------|-----------------|--------------------|
| | | Town of Lac La Biche | Lakeland County | |
| The total Aboriginal population 15 years and over | 4 065 | 620 | 1 005 | 129 745 |
| No certificate, diploma or degree (%) | 33 | 50 | 50.7 | 44.3 |
| High school certificate or equivalent (%) | 26.0 | 18.5 | 17.4 | 21.3 |
| Apprenticeship or trades certificate or diploma (%) | 18 | 12 | 13.9 | 11.5 |
| College, CEGEP or other non-university certificate/diploma (%) | 17.1 | 12 | 13 | 15.2 |
| University certificate or diploma below the bachelor level (%) | 1.6 | 2.4 | 4.5 | 2.76 |
| University certificate or degree (%) | 4.2 | 4 | 1 | 4.9 |

Source: Statistics Canada (2006a).

In the Town of Lac La Biche in 2006, the total Aboriginal population 15 years and over was 620 people. Of that total, 50% had no certificate, diploma or degree, which is higher than the provincial average of 44.3%. Almost 18.5% had a high school graduation certificate, which is lower than the provincial average of 21.3%. The percentage of people with a trades, college or other non-university diploma was 24%, which is lower than the provincial average of 26.7%. Finally, the percentage of people with a university certificate or diploma below the bachelor level, university certificate or degree is close to the provincial average (6.4% in the Town of Lac La Biche and 7.6% in Alberta) (Statistics Canada 2006a). Major fields of study for Aboriginal population in the town of Lac La Biche included the following:

- business, management and public administration (31.6%);
- personal, protective and transportation services (21%);
- architecture, engineering, and related technologies (13.1%);
- health, parks, recreation and fitness (10.5%);
- social and behavioural sciences and law (10.5%);
- agriculture, natural resources and conservation (7.9%); and
- humanities (5.3%).

In Lakeland County, the total Aboriginal population 15 years and over was 1 005 people in 2006. Of that total, 50.7% had no certificate, diploma or degree, which is higher than the provincial average of 44.3%. Almost 17.4% had a high school graduation certificate, which is lower than the provincial average of 21.3%. The percentage of people with a trades, college or other non-university diploma was 27%, which is close to the provincial average of 26.7%. Finally, the percentage of people with a university certificate or diploma below the bachelor level, university certificate or degree is close to the provincial average (5.5% in the Town of Lac La Biche and 7.6% in Alberta) (Statistics Canada 2006a). Major fields of study for the Aboriginal population in Lakeland County included:

- business, management and public administration (20.3%);
- architecture, engineering, and related technologies (17.2%);
- personal, protective and transportation services (17.2%);
- health, parks, recreation and fitness (11%);
- education, humanities, social sciences, mathematics (7.8% each); and
- physical and earth sciences (3.1%).

First Nations

Fort McMurray #468 First Nation

The Fort McMurray #468 First Nation (FMFN) consists of four reserves: three are located near Anzac on Gregoire Lake and the fourth is located about 20 km east of Fort McMurray. These reserves include Clearwater 175, Gregoire Lake 176, Gregoire Lake 176A and Gregoire Lake 176B. [Table 17.5-9](#) provides a list of the FMFN reserves (both populated and unpopulated), their locations and total area.

Table 17.5-9: Fort McMurray First Nation Reserves

| No. | Name | Location | Total Area (ha) |
|-------|--------------------|---|-----------------|
| 06721 | Clearwater 175 | On Clearwater River, 7 miles southeast of Fort McMurray; Twp 88, Rge 7, W4M | 915.4 |
| 06722 | Gregoire Lake 176 | 35 km southeast of Fort McMurray | 2 231.9 |
| 06723 | Gregoire Lake 176A | Twp 86, Rge 8, W4M, Frac Sec 10 and portion of SW1/4 Sec 15 | 67.4 |
| 06724 | Gregoire Lake 176B | Twp 86, Rge 8, W4M | 17.0 |

Source: INAC (2009).

As of September 2009, the total registered population for the FMFN was 652, with 334 people living on-reserve, 312 living off-reserve and six people living on Crown land (INAC 2009).

Heart Lake First Nation

The Heart Lake First Nation (HLFN) has two reserves: Heart Lake 167 and Heart Lake 167A. These two First Nations also share a remote reserve with other regional First Nations. The HLFN signed Treaty 6, but is geographically located within Treaty 8. The First Nation is a member of Tribal Chiefs Ventures Inc. [Table 17.5-10](#) provides a list of the HLFN reserves, their locations and total area. As of September 2009, the total registered population for the HLFN was 304, with 194 people residing on reserves and 110 off reserves (INAC 2009).

Table 17.5-10: Heart Lake First Nation Reserves

| No. | Name | Location | Total Area (ha) |
|-------|-----------------|--|-----------------|
| 06725 | Heart Lake 167 | 45 km northeast of Lac La Biche | 4 496.2 |
| 09171 | Heart Lake 167A | Portion NE1/4, Sec 26 & SE1/4, Sec 35, Twp 69, Rge 12, W4M | 8.3 |

Source: INAC (2009).

Beaver Lake Cree Nation

The Beaver Lake Cree Nation (BLCN) has one reserve, Beaver Lake 131, and also shares a remote reserve with other regional First Nations. [Table 17.5-11](#) provides a list of the BLCN reserves, their locations and total area. As of September 2009, the total registered population for the BLCN was 936, with 356 people residing on reserves, 568 off reserves and 12 on Crown lands (INAC 2009).

Table 17.5-11: Beaver Lake Cree Nation Reserves

| No. | Name | Location | Total Area (ha) |
|-------|-----------------|-----------------------------|-----------------|
| 06701 | Beaver Lake 131 | 105 km NE/NE Of/De Edmonton | 6 145.30 |

Source: INAC (2009).

17.5.2 Local Study Area

17.5.2.1 Conklin

Conklin is located 140 km southeast of Fort McMurray at the confluence of the Jackfish River and Christina Lake. It is a relatively isolated community, with a population of 338 residents in 2006, most of which are of Métis decent. Conklin is linked to Anzac to the north and Lac La Biche to the south by Highway 881. Although it is a small community, it has some local commercial businesses, including a gas bar, post office, store and related facilities that cater to local residents and the oil and gas industry. Another commercial development is Christina Lake Recreation Resort, which has a camp, café and lounge. Conklin has a community centre operated by the RMWB and small office for Keyano College opens once a week. There is a local school operated by the Northland School Division that offers classes from Kindergarten to Grade 9. Older students are bussed to secondary schools in Fort McMurray.

As of September 2009, Conklin Local School had four teachers and 30 students. The school is currently under utilized and has a capacity to accommodate double the number of students. The school facility is good and there are no budget constraints. The major issue facing the school is teacher and student retention. Teacher retention is difficult due to the small community lifestyle and student retention is complicated by attractive work opportunities (Howell 2009 pers. comm.).

In terms of community services, Conklin has a local volunteer fire department. Policing and other emergency services are provided by the RCMP detachment based in Fort McMurray (RMWB 2008c). Conklin seeks help from the local fire departments in Lac La Biche or Fort McMurray, with an average response time of two hours. Conklin's volunteer fire fighters receive training on a regular basis. The current capacity of the local fire department consists of nine local volunteers and three trucks. The department is short of trucks to deal with bigger multi-causality accidents, meaning that they need to seek help from the RMWB or Lac La Biche County in order to respond to these issues. With less serious accidents, the response time can vary from 15 minutes to two hours. Policing services are covered from Fort McMurray, with average response times varying between ten minutes and two hours and sometimes up to two days with less serious events (Tremblay 2009 pers. comm.).

Most residents live in single-family, owner-occupied houses. As of September, 2009 there were seven housing units available for sale or rent by the Wood Buffalo Housing and Development Corporation based in Fort McMurray. These are new units owned by the corporation and have been in Conklin for the last seven years. There are some small bed and breakfast businesses in Conklin which offer accommodation to construction workers. During the peak season (normally the fall), all available accommodation units will be full (Tremblay 2009 pers. comm.).

Utility services are all available, including natural gas (ATCO), telephone (Telus), a local water treatment plant and delivery service, sewage disposal via individual sewage tank pump outs and septic field systems, and a local sewage treatment lagoon. Weekly pick-up of residential waste is also available, as is a recycling program (RMWB 2008b).

The water treatment plant in Conklin is running at its maximum capacity. The RMWB will start constructing the new Water Treatment Plant in Conklin in the spring of 2010. Water source will be Christina Lake. This new water treatment plant is expected to be running and in operation in 2011, few months after the operation the municipality will decommission the current treatment plant. There is an on-going conversation about either expanding the current wastewater pond and/or adding a small plant near it to treat the wastewater. There is an ongoing discussion about adding a small distributing system under the ground with pumps to transfer water to households rather than trucking it. The municipality is currently in the design stage of a piping system for Anzac. Conklin design might happen during the next five years and may include a solid waste collection system. Current solid waste landfill in Conklin will be closed this year and there will be a transfer system to Fort McMurray landfill twice a week (Guerin 2009 pers. comm.).

There is currently no commercial usage for the current water treatment plant in Conklin. The plant is running at 100% of its capacity and has been like that for the last five years. The municipality don't plan for commercial usage and design the plant according to the projected population growth in the community. Some local developers use contractors' to transfer/truck solid waste and wastewater to the municipality treatment facility or setting ponds for a fee. Developers could negotiate buying capacity in the municipality's facilities (water treatment plant, wastewater treatment plant, solid waste landfill) by funding certain parts of the planned projects (Guerin 2009 pers. comm.).

The Conklin Area Structure Plan (ASP) indicates that the hamlet is currently experiencing moderate growth and development pressures, and consequently, there is a need for an appropriate supply of residential, commercial and industrial sites (RMWB 2002). Industrial developments are required to adhere to new industrial land use expansion areas set out by the ASP. Additionally, the ASP will require companies to develop plans that consider quality development of a site, including aesthetic design, location of parking and loading areas, and appropriate scale and design of signage. Detailed outline plans will also be required prior to the consideration of a plan (RMWB 2002). In keeping with the Conklin ASPs guidelines and policies, KNOC will abide by newly implemented industrial zoning initiatives, and will consider quality site development and requirements for detailed outline plans.

17.5.2.2 Janvier (Chard)

Janvier is located 100 km southeast of Fort McMurray, adjacent to the boundary of the Chipewyan Prairie Dene First Nation (CPDFN) reserve lands. Of the 218 residents who lived there in 2006, the majority were below the age of 15. Although the oil and gas industry contributes to the economic base, the majority of adult residents are employed in government services.

The community is accessed from Anzac via an unpaved, all-weather section of Highway 881, and has twice weekly bus services provided by Diversified Transportation. Commercial facilities include stores, gas bars and a construction company. Three-quarters of the homes in Janvier are owner-occupied (RMWB 2008b).

Utilities include Electric Power (ATCO), telephone service (Telus) and water from a local water treatment plant. Natural gas is not available and residents rely on propane for heating. There is no municipal sewage system and disposal is handled individually through privies or septic tank systems. There is a weekly solid waste disposal pick-up system using the Janvier landfill facility.

Emergency services, including ambulance and police, are provided from Fort McMurray, and there is a local volunteer fire department. Radio and television reception are available, and some homes have satellite dishes for TV reception.

Regarding education, there is a Northland School Division elementary school (Grades 1 to 8) in the town, and bus service to Fort McMurray for secondary school students (RMWB 2008b).

17.5.2.3 Aboriginal Profiles

First Nations

Chipewyan Prairie Dene First Nation #470

Members of the Chipewyan Prairie Dene First Nation #470 (CPDFN) live in the community of Janvier (Chard) and on the following reserves: Janvier 194, Cowper Lake 194A and Winefred Lake 194B. [Table 17.5-12](#) provides a list of the CPDFN reserves (both populated and unpopulated), their locations and their total areas. As of September 2009, the total registered population was 710, of which 346 people were on reserves and 364 were off reserves (INAC 2009).

Table 17.5-12: Chipewyan Prairie First Nation Reserves

| No. | Name | Location | Total Area (ha) |
|-------|--------------------|--|-----------------|
| 06726 | Janvier 194 | 97 km southwest of Fort McMurray | 2 486.7 |
| 09204 | Cowper Lake 194a | North shore of Cowper Lake; Twp 80, Rge 3, W4M | 143.0 |
| 09205 | Winefred Lake 194b | North end of Winefred Lake; Twp 76, Rge 4, W4M | 450.0 |

Source: INAC (2009).

Métis

Métis in the LSA belong to two locals: Métis Local #193 in Conklin and Métis Local #214 in Janvier (Chard). Full description of Métis groups in the LSA is provided in the consultation section of Volume 1.

17.5.2.4 Other Oil Sands Projects in the LSA

There are currently nine other oil sands project developments in the LSA. Those nine projects are at various stages of development ranging from the application stage, the construction stage to the operations stage. [Table 17.5-13](#) provides a list of those nine projects and their status.

17.6 Potential Effects and Mitigative Measures

17.6.1 Introduction

The RSA of the project includes the RMWB and Lac La Biche County. Socio-economic effects will be discussed at the level of the VCs. Under each VC effects on RMWB and Lac La Biche will be discussed during the construction and operation phase.

17.6.2 Effects on the RSA

17.6.2.1 Economy

[Table 17.6-1](#) provides a summary of socio-economic effects and mitigation on the RSA. Details are provided below.

Provincial Economy

The capital expenditures for the project are estimated to total \$540M (million Canadian dollars) of which 90% (\$486M) would be spent in Alberta and up to 15% (\$81M) of total expenditures could occur in the RMWB. Based on 2005 Alberta economic multipliers, the expenditures of \$486M in Alberta would directly increase Alberta GDP by \$172M, labour income would directly be increase by \$138M and 1 609 direct jobs would be created. In addition, 1 355 indirect jobs and up to 1 750 induced jobs would be created. As illustrated in [Table 17.6-2](#) total economic impact (direct, indirect and induced) of project capital expenditures in Alberta would be \$474M in GDP, \$319M in labour income and 4 714 jobs.

Table 17.5-13: Other Projects in the LSA

| Project Description | Current Status | Phase | Costs/Expenditures |
|---|---|--------------|---|
| Devon Jackfish 2 (Devon 2006a, 2006b) | JF1 – Operating 2008 JF2 Construction 2011 | Construction | Impact on GDP – \$675 million |
| | | Operations | Average Annual – life of Project 2010-2034; \$102 million |
| CNRL Kirby Project (CNRL 2007) | Application | Construction | \$600 million |
| | | Operations | \$110 million/year |
| ConocoPhillips Surmont In-situ Oilsands Project (ConocoPhillips Canada 2008) | Phase 1 – Operating Phase 2 Approved | Construction | 226.4 million |
| | | Operations | 145-165 million/year from 2004-2013 |
| EnCana Christina Lake (EnCana 1998) | Operating | Construction | \$368 million (all three phases) |
| | | Operations | \$104 million (all three phases) |
| EnCana Foster Creek (AEC 1999) | Operating; Phase 1F Application | Construction | NA |
| | | Operations | NA |
| Enerplus Kirby (Enerplus Resources Fund 2008) | Application | Construction | \$400 million (total for 3 years) |
| | | Operations | \$400 million |
| MEG Christina Lake (MEG Energy Corp. 2005) | Phase 1: Construction 2009 Phase 3: Application | Construction | 4.3 billion/9 Capital Expenditures from 2010-2014 |
| | | Operations | 850 million/year (Starts in 2015 for 27 years) |
| Petrobank May River (Petrobank Energy & Resources Ltd. 2008) | Approved | Construction | NA |
| | | Operations | NA |
| Statoil/Hydro Kai Kos Denseh Project (North American Oilsands Corporation 2007) | Leismer Demonstration Construction 2009 All remaining others application | Construction | Leismer Demonstration Hub \$582 million Leismer Commercial \$379 million; Leismer Expansion \$991 Corner \$2 089 Thornbury \$1 950 Hangingstone \$633 Northwest Leismer \$691, South Leismer \$525 \$7 840 (total cost of entire life of Project) |
| | | Operations | NA |

Table 17.6-1: Summary of Socio-economic Effects and Mitigation on the RSA

| VCs | Indicators | Potential Effects | Mitigation | Residual Effects After Mitigation |
|--|---|--|--|-----------------------------------|
| Construction Phase | | | | |
| Demography | Population growth Population change | Arrival of construction workers (approx. 500) for 30 months | No mitigation required. All construction workforce will be housed in a construction camp near the site. They will increase the shadow population but will have no regional effects on demography. | Low |
| Education | Adult education | Increase demand for training courses | No mitigation required as local colleges in the RSA have ample capacity to address oil sands industry's demand for training courses and no mitigation required. | NA |
| Housing | Housing availability and affordability | Increase demand for housing | KNOC will build a construction camp near the Project work site. | Neutral |
| Utilities | Utilities capacity and availability | Increase demands for utility services | KNOC will build a construction camp near the Project, utility services will be provided as follows: <ul style="list-style-type: none"> • Potable water will be trucked to the site from a water source in either Lac La Biche or the RMWB; • Wastewater will be trucked to a treatment plant in either Lac La Biche or RMWB; and • Solid waste will be kept in animal proof containers and then will be trucked from the site to an appropriate landfill in either Lac La Biche or RMWB. | Low |
| Traffic Volume and Transportation infrastructure | Roads conditions Traffic volumes Transportation methods and capacity | Potential effects to road conditions Increase traffic volumes Increase pressure on transportation | <ul style="list-style-type: none"> • Use of Highway 881 to reduce additional traffic on Highway 63. • Proper use of safe Highway driving standards. • Provide Pilot Trucks when transporting oversized loads to and from the Project site. • Enforcement of posted speed limits on local industry roads and Highway 881. • Post traffic signs near Conklin. • Fly in/fly out plan for workforce rotation and associated bussing between airport/airstrip and camp. | Low |
| Protective Services | Fire services capacity Emergency services capacity Police services capacity | Increase demand for fire services Increase demand for emergency services Increase demand for policing services | <ul style="list-style-type: none"> • KNOC security, emergency, safety, accommodation and bussing plans. • KNOC's internal camp policies, particularly respectful workplace and alcohol and substance abuse policies. | Low |

| VCs | Indicators | Potential Effects | Mitigation | Residual Effects After Mitigation |
|------------------------|--|--|--|-----------------------------------|
| Health | Health conditions Health services availability and capacity | Increase demand for health services | <ul style="list-style-type: none"> KNOC construction and operation camps will include fully equipped first aid facility staffed with a trained medical personnel, an ambulance or dedicated vehicle for ground transportation to nearest hospital and arrangements for air medi-vac to transport construction workers with life threatening illness or injuries to an appropriate medical facility. KNOC's Project is located in closer proximity to Lac La Biche than Fort McMurray and therefore will use health services in Lac La Biche which are sufficient to handle the additional demand created by the Project. KNOC's internal camp policies will promote healthy diet, ways to reduce the spread of infectious disease and viruses and encourage the use of Vitamin D. | Low |
| Economic | GDP Income Employment | Increase in GDP Increase in Income Increase in Employment | No mitigation required. KNOC has intention to procure qualified local and Aboriginal contractors and service and hire qualified local residents. | NA |
| Operation Phase | | | | |
| Demography | Population growth Population change | Arrival of operation workers (50 workers) for approximately 25 years | No mitigation required. All operation workforce from outside the RSA will be housed in an operation camp near the site. They will increase the shadow population but will have no regional effects on demography. | Low |
| Education | School education Adult education | Increase demand for schools Increase demand for training Courses | No mitigation required as local colleges in the RSA have ample capacity to address oil sands industry's demand for training courses and local schools have capacity to accommodate additional students. | NA |
| Housing | Housing availability and affordability | Increase demand for housing | KNOC will build and operate a camp near the Project. | Neutral |
| Utilities | Utilities capacity and availability | Increase demands for utility services | <p>KNOC will build a camp for the operations workforce located near the Project. Utility services will be provided as follows:</p> <ul style="list-style-type: none"> Potable water will be trucked to the site from a water source in either Lac La Biche or the RMWB. Wastewater will be trucked to the treatment plant in either Lac La Biche or RMWB. and Solid waste will be kept in animal proof containers and then will be trucked from the site to the dumpsite in either Lac La Biche or RMWB. | Low |

| VCs | Indicators | Potential Effects | Mitigation | Residual Effects After Mitigation |
|--------------------------|---|--|--|--|
| Roads and Transportation | Roads condition Traffic volumes Transportation methods and capacity | Potential effects to road conditions Increase traffic volumes Increase pressure on transportation | <ul style="list-style-type: none"> • Use of Highway 881 to reduce additional traffic on Highway 63. • Proper use of safe Highway driving standards. • Post traffic signs near Conklin. • Provide pilot truck when transporting oversized loads to and from the Project site. • Use air transportation via Leismer airstrip at the time of operations workforce rotation. • Fly in/fly out plan for workforce rotation and associated bussing between airport/airstrip and camp. | Low |
| Protective Services | Fire services capacity Emergency services capacity Police services capacity | Increase demand for fire services Increase demand for emergency services Increase demand for policing services | <ul style="list-style-type: none"> • KNOC security, emergency, safety, accommodation and bussing plans. • KNOC's internal camp policies particularly respectful workplace and alcohol and substance abuse policies. | Low |
| Health | Health services availability and capacity | Increase demand for health services | <ul style="list-style-type: none"> • KNOC operation camps will include fully equipped first aid facility staffed with trained medical personnel, an ambulance or dedicated vehicle for ground transportation of workers to nearest hospital and arrangements for air medi-vac of to transport workers with life threatening illness or injuries seriously injured or ill workers to an appropriate medical facility. • Operation workers will use Lac La Biche health services which have the necessary capacity to handle the additional demand created by the Project. • KNOC's internal camp policies will promote healthy diet, ways to reduce the spread of infectious disease and viruses and encourage the use of Vitamin D. | Low |
| Economic | GDP Income Employment | Increase in GDP Increase in Income Increase in Employment | <ul style="list-style-type: none"> • No mitigation required. KNOC has intention to hire qualified local residents and procurement of qualified local contractors and service providers. | NA |

Table 17.6-2: Summary of Economic Effects during Construction and Operations

| | Project Effects on GDP (millions) | Project Effects on Employment (jobs) | Project Effects on Labour Income (millions) | Average Income per Job |
|---------------------------|-----------------------------------|--------------------------------------|---|------------------------|
| Construction Phase | | | | |
| Direct | \$172 | 1 609 | \$138 | \$85 608 |
| Indirect | \$148 | 1 355 | \$94 | \$69 036 |
| Induced | \$154 | 1 750 | \$87 | \$50 000 |
| Total | \$474 | 4 714 | \$319 | \$68 214 |
| Operation Phase | | | | |
| Direct | \$75 | 57 | \$7 | \$127 666 |
| Indirect | \$16 | 115 | \$8 | \$72 323 |
| Induced | \$8 | 101 | \$5 | \$47 000 |
| Total | \$99 | 273 | \$20 | \$74 444 |

Source: Alberta Economic Multipliers 2005.

Alberta economic multipliers for the construction industry represent a wide range of construction industries including residential construction industry which is more labour intensive than the oil sands construction industry. In order to get more accurate estimate of the total number of direct, indirect and induced jobs during the construction phase, the peak number of construction workers is used. The construction workforce is expected to peak at 550, the duration of the construction phase is expected to be almost two years (20 months), which means that the total number jobs would be about 1 100. Total direct employment is estimated to range from 1 100 to 1 609 jobs. Similarly, applying the Alberta economic multipliers to the lower number of direct jobs would generate a range in the number of indirect and induced jobs created. Indirect jobs will range from 926 to 1 355 and induced jobs will range from 1 181 to 1 750. Total direct, indirect and induced jobs will range from 3 207 to 4 714.

Average annual operations and maintenance expenditures for the project are estimated at \$112M (million dollars) of which 15% (\$17M) will be spent in RMWB, 75% (\$84M) will be spent elsewhere in Alberta and 10% (\$11M) would be spent in other provinces in Canada. The average annual expenditures in Alberta would directly increase Alberta GDP by \$75M, labour income would increase by \$7M and 57 direct jobs would be created (Table 17.6-2). In addition, average annual operations expenditures would result in an additional 115 indirect jobs and up to 101 induced jobs in Alberta. The total economic impact (direct, indirect and induced) would total \$99M in GDP, 273 jobs and \$20M in labour income.

Regional and Local Economy

KNOC's socio-economic objectives include optimization of qualified local and regional Aboriginal and non Aboriginal workforce, contractors and services for construction and operations and opportunities that are available. KNOC's workforce requirements during construction and operation will include a range of education, training and employment skill categories. These can be accessed through procurement of LSA and RSA Aboriginal and non Aboriginal contractors and services that are needed by the project including clearing and

slashing, surveying, local transportation, janitorial services, potable water supply and sewage and solid waste disposal, site security, medical services, vacuum and hydro-vac trucks, road and site maintenance and snow removal. Needed supplies and materials that are available in the RSA include offices supplies, aggregate, concrete and scaffolding. KNOC estimates that up to 15% of the construction capital expenditures and labour force requirements will accrue to the RMWB.

Measures that can be implemented by KNOC to ensure that the 15% procurement and employment within the LSA and RSA is achieved could include:

- stating in the Engineering, Procurement and Construction (EPC) bid and award documents that the selected EPC and all subcontracted businesses will be expected to support and comply with KNOC socio-economic objective by giving preference to qualified local and local Aboriginal businesses in fulfilling the construction and operations phase contract and service work packages;
- breaking the contract and service work packages down into sizes that local and regional businesses have the capacity to undertake;
- setting aside small work packages for local and regional Aboriginal and non Aboriginal businesses; and
- preferential direct hire of qualified local and regional Aboriginal and non Aboriginal labour.

According to the economic indicators of the RMWB, the ratio of basic/non basic job is 1.2. This suggests that for every permanent direct job created by the Project 1.2 non basic indirect and induced jobs would be created. This ratio is lower than Alberta ratio which means that the RMWB doesn't have a diversified job market. The economic indicators in Lac La Biche County indicate that the ratio of basic/non basic job is 3.1. This suggests that for every permanent direct job created by the Project 3.1 non basic indirect and induced jobs will be created. This ratio is higher than Alberta ratio which means that Lac La Biche County has a more diversified economy market that KNOC could benefit from. Because the RSA includes both RMWB and Lac La Biche County it is assumed that the average basic/non basic job ratio is about 2.1. Applying this ratio to the percentage of direct construction jobs that are expected to be filled in the RSA (165 jobs) indicates that up to 347 indirect and induced jobs would be generated in the region during the construction phase. Applying this ratio to the eight direct operations jobs filled from within the RSA would result in an additional 17 indirect and induced jobs created in the RSA during the operations phase of the project.

On the basis of the above mentioned economic indicators and potential procurement and direct employment opportunities the project's local and regional economic effects on the RMWB and Lac La Biche County will be positive in direction, low in magnitude and short term in duration during the construction phase. The operations phase economic effects of the project will be positive, local and regional in geographic extent, low in magnitude and long term in duration.

17.6.2.2 Demography

The estimated duration of the construction phase is 30 months and the construction workforce is estimated to peak at approximately 550.

Construction workers will be housed in a construction camp located near the work sites. The construction camp will be fully equipped with First Aid facility staffed with trained medical personnel. An ambulance or dedicated vehicle and emergency medical technicians will be on-site for transportation of injured or ill personnel to nearest hospital, if required.

KNOC is planning to build a construction camp with fly in/fly out service for construction workforce hired from outside the region it is assumed that these workers will not bring their families to the project area during the construction phase. Therefore, KNOC's project effects on the regional demography will be low and short term during the construction phase.

The operating life of the project is estimated to be approximately 25 years. Total number of operation workers will be 50 of which it is estimated that 15% (8) will be hired from the RMWB, 75% (37) will be hired from elsewhere in Alberta and 10% (5) from outside Alberta. Operation workforce will be housed in an operations camp located at the project site. Crew cab trucks will be provided to transport workers between the camp and work site and between camp and, Leismer airstrip, located at the Petrobank Mary River oil sands lease northwest of Conklin, at the time of workforce rotations.

With this plan, operation workers from outside the RSA (85% or 42 people) are assumed to live in camp while on the job and maintain a primary residence somewhere outside the region. However, given the operating life of the project is approximately 25 years it is probable that some of the operations staff from outside the region will choose to purchase residential property in the RSA and relocated their dependants as a preferred alternative to living in a camp over the long term and returning home during work rotations. The number of operations workers that will decide to relocate to the RSA is difficult to estimate because it is a family and life style decision. For the purpose of assessing potential operations phase effects on demography and infrastructure services in the RSA, it is assumed that 50% of operations workforce from outside the RSA (21 people) will decide to relocate with their dependants to either Fort McMurray or Lac La Biche. Given that average number of persons in all census families in Alberta is 3.0, project operations could result in a direct population increase of 63 people in the RSA. The addition of 63 people to the existing population in the RSA would have a positive effect that is low in magnitude, regional and long term in duration in both the RMWB and Lac La Biche County.

If all operation workers hired from outside the region choose to reside in the operations camp while on the job they will have no effects on the permanent population in the RMWB and Lac La Biche County but will have regional, low magnitude and long term effects on the shadow population in the RMWB.

17.6.2.3 Education

During the construction phase of the project, the project's potential effects on education services could include the labour force demand for industry related training courses offered by local colleges such as Keyano and Portage College and the demand for school education by dependants of KNOC staff that choose to mover their families to Fort McMurray or Lac La Biche in the RSA during project operations. With the construction camp and the fly in/fly out service provided by KNOC, construction workers from outside the RSA are not expected to bring their families and therefore the only anticipated effect on education services during the construction phase is workers demand for industry related training courses offered by local colleges (Keyano in the RMWB and Portage in Lac La Biche). Given the current capacity of those colleges and preparedness to offer these training courses for industry, this effect will be positive regional, short term with a low magnitude and no mitigation required.

During the operation phase of the project, potential effects on education services could include the labour force demand for industry related training courses offered by local colleges such as Keyano and Portage College and the demand for school education by dependants of KNOC staff that choose to mover their families to Fort McMurray or Lac La Biche. If 50% of operation workforce from outside the RSA (21 people) decide to move in with their families and given that average number of persons in all census families in Alberta is 3.0, there could be 21 dependents who need school education. Taking into account current enrolment and capacity of schools in the RSA the arrival of 21 additional students could be accommodated and will have neutral effects. As for demand for industry training, given the current capacity of local colleges and preparedness to offer training and education services for the industry in a growing community, the effect on both Keyano College in Fort McMurray Portage College and in Lac La Biche would be positive, regional, long term with a low magnitude and no mitigation required.

17.6.2.4 Housing and Utilities

During the construction phase, KNOC will build a construction camp for the construction workforce located near the project. Utility services will be provided as follows:

- potable water will be trucked to the site from a water source in either Lac La Biche or the RMWB;
- wastewater will be trucked to a treatment plant in either Lac La Biche or RMWB for ultimate disposal; and
- solid waste will be temporarily stored in animal proof bins at the camp and then trucked from to a landfill at Fort McMurray or Lac La Biche for final disposal.

KNOC will pay a tipping fee for use of these municipal utilities. The municipalities may encourage industry users to contribute capital toward expansion of these municipal facilities instead of a tipping fee because expansions are needed and the associated capital costs are substantive. With KNOC's construction camp and utility services plan, the project will have neutral effects on housing and a negative regional, short term effect of low magnitude on utility services in the RSA.

During the operation phase, KNOC is planning to build a self contained camp for the operations workforce and implement a fly in/fly out workforce rotation schedule. It will utilize the same utilities plan as described above but will dig a well at site for potable water. The camp may also have an on-site incinerator to reduce the volume of solid waste going to a municipal landfill in the RSA. Because project operations will span approximately 25 years, it is probable that up to half of the operation workers recruited from outside the RSA will decide to relocate to Fort McMurray or Lac La Biche in the RSA. As a result there will be a total demand of up to 21 homes in the Fort McMurray area or Lac La Biche. Residential land and housing supply in Lac La Biche has capacity to easily accommodate project needs. The amount of residential lots and houses on the market in Fort McMurray is expected to improve significantly with the recent government decision to build additional housing in the community. Both the RMWB and the County of Lac La Biche are planning some expansion to their utility services and are encouraging developers to negotiate the commercial use of those services.

With that, project effects on housing in the RSA will be neutral. KNOC will consider the same above mentioned utility services plan and in addition, the volume of sewage and solid waste generated at the operations camp will be small and will be trucked to the sewage treatment facility and landfill in either the RMWB or Lac La Biche County for final disposal. The operation phase is predicted to have low magnitude, regional and long term effects on housing and utility services in the RSA.

17.6.2.5 Protective Services

Fire and Emergency Services

During the construction and operation phases of the project, KNOC will minimize any additional demand created during the construction phase on fire and emergency services in the RSA by the following:

- an ambulance or dedicated vehicle will be available at the work site and near the construction and operation camps in accordance with Alberta's occupational health and safety guidelines;
- arrangements for air medi-vac service will be in place to transport construction or operations workers with life threatening injuries or illnesses to the nearest appropriate medical centre;
- trained medical personnel, equipment and supplies will be available at the construction and operation camps in accordance with Alberta's occupational health and safety guidelines;
- fire fighting equipment and workers with fire fighting training will be available at both the worksite and camp during the construction and operations phases of the project;
- given that KNOC's proposed project is within the fire protection area, KNOC will work with the SRD office in Lac La Biche, to ensure that both construction and operation camps are fire smart and will inform the office about the construction plans and schedules for the construction and operation camps;

- KNOC will follow Alberta Occupational Health and Safety requirements for isolated worksites. Within the construction and operation camps there will be emergency response plans in place and full compliance with applicable fire and emergency regulations; and
- KNOC will send a copy of their emergency preparedness plan for review and approval to the Regional Emergency Preparedness Department (REPD) of Alberta Health in Fort McMurray and will engage the REPD during accidents and coordinate with them.

With implementation of the above mentioned measures the effect of the project on fire and emergency services in the LSA and RSA is predicted to be low in magnitude and short term in duration during the construction phase; and low in magnitude, local and regional in scope and long term in duration during project operations.

RCMP

The size of the construction workforce, that is expected to peak at approximately 500, during a 30 month construction period and provision of a camp located near the work sites, along with the current capacity of policing services in the RSA and current crime rates are used to predict the effects of the project on RCMP services in the RMWB and Lac La Biche County.

Other mitigation factors that will affect project requirements for policing services include:

- 1) implementation of the following camp and work site policies:
 - no firearms or hunting bows will be permitted in camp;
 - gambling policy;
 - alcohol and substance abuse policy (includes both alcohol and drug use);
 - motor vehicle safety policy;
 - respectful workplace policy (addresses harassment, fighting, theft and cross cultural awareness); and
- 2) a camp and work site security plan and personnel; and
- 3) bussing service to transport operations workers between the camp and Leismer airstrip at the time of work rotation during project operations.

The RCMP detachment in Fort McMurray is working at or near capacity in terms of staff and equipment to service the urban and rural population within the detachment boundaries. Like many other businesses and public services in the RMWB there is an ongoing challenge of recruiting and retaining staff, due largely to the high cost of living and lack of affordable housing.

According to the RCMP in Lac La Biche the town's economy and population is growing and busy due the recent oil sands development in the area and growth in tourism in the area. Like the RCMP Detachment in Fort McMurray the Lac La Biche detachment is under resourced, operating at or near capacity and challenged in terms of recruitment and retention of needed officers.

During project construction, Project-related traffic is expected to contribute a substantial increase in the traffic volumes in Highway 881 and higher traffic volumes can potentially result in an increase in motor vehicle accidents that the RCMP highway patrols based in Fort McMurray and Lac La Biche may be called upon to respond to.

With implementation of the above mentioned mitigation measures, KNOC project-related effects on RCMP policing services in Fort McMurray and Lac La Biche are expected to be low in magnitude, regional and short term in duration during construction.

The same mitigation measures will apply during the operations phase but the workforce will be much smaller (50 people). Regardless of whether the 50 people all live in the on-site camp or if up to half of them and their dependants take up residence in Fort McMurray or Lac La Biche, the effect of this incremental population on RCMP policing services provided in Fort McMurray and Lac La Biche are expected to low or negligible in magnitude, regional in scope and long term in duration.

17.6.2.6 Health Services

The project is not expected to generate a substantial increase in demand on this health centre and its resources due to the following:

- KNOC construction and operation camps will include fully equipped first aid facility staffed with trained medical personnel, medical supplies and equipment in accordance with the Alberta occupational health and safety guidelines;
- KNOC will have first aid and an ambulance or dedicated ground transportation vehicle at the project work site at all times;
- KNOC's internal camp policies will promote healthy diet, ways to reduce the spread of infectious disease and viruses and encourage the use of Vitamin D;
- arrangements will be made for air medi-vac services during project construction and operations to transport workers with life threatening illnesses or injuries to the nearest appropriate medical centre; and
- contractor bussing will be provided between the Leismer airstrip and the KNOC project site. KNOC's project site is located closer to Lac La Biche than Fort McMurray (176 km to Fort McMurray and 138 km to Lac La Biche) and workers requiring health services are more likely to go to the closest provider of such services in Lac La Biche.

Lac La Biche Health Centre has ample capacity to accommodate the demand of the local population and it occasionally receives patients from Fort McMurray. In addition, during the last two years the centre assessed and treated many patients (nearly 1 000 in one year) associated with pipeline installation and exploratory drilling activities in the southern portion of RMWB. Taking into consideration the KNOC mitigation measures mentioned above, incremental demand for health care services in Lac La Biche during construction of the project is expected to be low in magnitude and within the existing capacity of Lac La Biche Health Centre.

The same mitigation measures will apply during the operations phase but the workforce will be much smaller (50 people). Regardless of whether the 50 people all live in the on-site camp or if up to half of them take up residence in Fort McMurray or Lac La Biche, the effect of this incremental population on health care services in Fort McMurray or Lac La Biche would be very low in magnitude and long term in duration.

17.6.2.7 Transportation

Construction related traffic will access the project from Ft McMurray or Lac La Biche via Highway 881. Vehicles heading south from Fort McMurray on Highway 881 to the project would travel past the Conklin turnoff to the EnCana bypass road or the Devon owned Sunday Creek road and travel east on this road to where it intersects with the BP road which provides access to the project site. Vehicles traveling north to the project site on Highway 881 from Lac La Biche and beyond can access the site by turning east on the Sunday Creek road to the site or they can continue a few kilometres further north on Highway 881 and turn east on the EnCana bypass and BP roads to access the project site.

Construction related traffic (labour, equipment, materials, contractors, services) volumes traveling on Highway 881 and these oil sands development roads are expected to average 30 return trips per day and peaking at 50 return trips per day over the 30 month construction period. Project related traffic on Highway 881 near Conklin will increase the current ADDT count (930 in 2008) by 6% to 11% (990 to 1 030 vehicles) during construction phase. The truck access to and from the CPF will be via the EnCana bypass, BP and Sunday Creek roads and Highway 881. So, during the 30 month construction period, incremental project-related traffic is expected to range from 236 to 276 vehicles per day. This increase is considered moderate in magnitude but well within the design specifications of Highway 881. The design capacity of the three oil sands development roads used is unknown. Road use agreements and associated annual financial payments by industrial users of the road to the road owners is thought to be sufficient to ensure that the roads are properly maintained and upgraded as necessary to ensure the motor vehicle safety of those using the roads. In addition, posted speed limits of 80 km/hr on these oil sands development roads will be enforced by the industries using these roads.

As a result, potential adverse effects including road deterioration and compromised motor vehicle safety will be avoided.

As a result, construction related vehicular traffic is expected to have a moderate effect on Highway 881 and the oil sands development roads, which is local and regional in scope and short term in duration. Further, this traffic is expected to have an effect that is low magnitude, regional and short term on Highway 63 near Fort McMurray.

Project operations related traffic volumes are expected to be less than volumes incurred during the construction phase. Operations traffic (labour, contractors, supplies and services) traveling on Highway 881 and the EnCana and BP and or Sunday Creek Road are expected to average 30 return trips per day which represents an AADT increase of 6% on Highway 881 above the

most recent traffic counts on the highway (2008). This takes into account the possibility that up to 25 of the 50 operations workers could take up permanent residence in the RSA rather than living in an on-site camp. The effect of the project related traffic on the three oil sands roads will be addressed through ongoing road maintenance.

Operations traffic effects on the road transportation infrastructure in the LSA and RSA will be low in magnitude, local and regional in scope and long term in duration. Project operations traffic increase on Highway 881 and the three oil sands development roads is expected to be moderate, local and regional in scope and long term.

17.6.3 Effects on the LSA

In the LSA, some community services such as schools from Kindergarten to Grade 9, utility services and temporary accommodation are provided locally but most of other services including health care, protective services, education beyond Grade 9 and roads and transportation services are administered and delivered from either the RMWB out of Fort McMurray or Lac La Biche County.

During the construction phase of the project, the arrival of construction workforce will increase the demography of the LSA by approximately 500 workers at peak. Given the short duration of the construction phase and the provision of camp accommodation, construction workers are not expected to bring their families to the project area. There is not expected to be any additional demand on education services, housing, utilities or roads in LSA communities because of the construction activities. It is likely that some businesses in LSA communities could benefit economically as a result of the construction activities. Local businesses that provide goods and services that are required during construction such as clearing and slashing, earth moving, vacuum and hydro-vac trucks, road maintenance and snow removal could be benefit. In addition, gas bars/stores and possibly the Christina Lake resort could experience some incremental business as a result of construction related people traveling to or from the project site or in the event that construction workers bringing their RVs and families to Christina Lake during summer months.

The construction workforce will create some additional demand for health and protective services, but these services are provided at Fort McMurray and Lac La Biche in the RSA. The project will generate an increase in traffic volumes on Highway 881 in the vicinity of Conklin but very little of this traffic is expected to pass through Conklin on route to or from the project site. Highway 881 is managed by the Alberta Transportation office in Fort McMurray and maintained by Alberta Transportation office in Lac La Biche.

Construction of the project is expected to have negligible effect on education, health care, protective services and utilities in LSA communities. But, it could generate some economic benefits for some businesses located in LSA communities.

During the operation phase of the project, an on-site camp will be provided for a workforce of 50 people. Given that the operating life of the project is approximately 25 years it is estimated that up to half of the operation workforce (21 people) from outside the region may decide to relocate to the project area.

Because the LSA communities are small, with few amenities, services, utilities and available housing, it is not anticipated that operations workers would choose to live in these communities. As a result, there will be no effects on LSA community services, infrastructure and utilities and no mitigation required. It is possible that local businesses that provide goods and services needed during project operations could benefit from available project business.

17.7 Cumulative Effects

Although a wide range of capital projects have been identified in the RSA, the main drivers of cumulative effects for project are other oil sands developments in the RMWB and particularly oil sands projects located in the southern part of the Wood Buffalo region near Conklin. Cumulative effects of infrastructure and oil sands projects located at or north of Fort McMurray in the RSA are briefly discussed in terms of their numbers, costs and distance from the project. Cumulative effects of oil sands projects located in the LSA are given more attention due to their proximity to the project (spatial overlap) and their potential to more directly affect local valued components.

The focus of this discussion is the sensitivity of selected VCs to these cumulative influences, particularly due to temporal overlaps. Cumulative socio-economic benefits are sensitive to the capacity of the local economy to absorb incremental opportunities; there may be competition for human and business resources. Cumulative negative socio-economic effects are sensitive to the ability of service providers, usually local, regional and the Provincial governments, to adjust to increased demands for infrastructure and public services. Although there is usually a time-lag between when increases in this demand first occurs and when higher government revenues from increased economic activity are received, adjustments do occur over time.

17.7.1 Regional Study Area

The construction schedule for the project will commence in 2013, during the same timeframe 31 other oil sands development projects in the RMWB will be in either construction or operation phase. The total value of these projects is almost \$83 447M. The status of other oil sands development in the area is difficult to confirm as most are currently on hold. At least 14 will be in the construction phase and have a value of \$50 914M.

The operation phase of KNOC project will commence in 2015. The costs of other projects in the RMWB that will commence operations in 2015 is difficult to confirm because most are currently on hold or in the proposal stage. Cumulative effects of the KNOC project and other projects in the regional study area (RSA) will generate a substantive increase in the GDP, employment and employment income in the Province of Alberta. The incoming labour force and populations associated with many of the oil sands projects in the RSA will create other cumulative effects on

the RSA infrastructure, utilities, services and housing especially in Fort McMurray. In response to these cumulative effects the RMWB and Fort McMurray are expanding the transportation infrastructure, serviced land and housing, potable and waste water treatment and landfill capacity, school and recreation facilities.

To the extent these effects can be determined, their contribution to cumulative effects is already largely accounted for in the baseline conditions and project-specific effects assessment described previously.

17.7.2 Local Study Area

There are nine other oil sands developments in the local study area (LSA). During the construction phase of the project (from 2013 to 2015) at least six other oil sands projects are planned to be in either construction or operation phase. These projects include Devon Jackfish 2, ConocoPhillips Surmont Phase 1, EnCana Foster Creek Phase 1D, MEG Christina Lake Regional Project, Statoil/Hydra Kai Kos Denseh SAGD Project, and EnCana Christina Lake Phase 1C.

If there is temporal overlap of oil sands projects in the LSA with the project's construction phase, this could create potential cumulative effects related to the local; economy, ground transportation and health services valued components.

17.7.2.1 Economy – Employment and Income

The overlap of the project's construction phase with other oil sands projects in the LSA should not affect KNOC's ability to hire 15% of the workforce from the local labour pool. KNOC will implement their socio-economic objectives of use of local contractors and providing Aboriginal business opportunities by requiring their major contractors to provide these opportunities to local and regional Aboriginal and non Aboriginal labour and businesses. This will be clearly spelled out in the bid documents sent out to potential EPC contractors and their subcontractors.

During the operation phase, the overlap of KNOC with at least six other projects will likely create competition for labour. KNOC will probably meet its objective of hiring 15% of operations workforce (eight people) by way of contracted work during the operations phase. This could include camp operations/maintenance, road maintenance and snow removal, potable water supply or sewage and solid waste disposal.

KNOC is confident that it can effectively compete for skilled labour needed during construction and operations phases of the project through provision of competitive wages and benefits and implementing the management measures discussed previously for project-specific effects. There are many businesses in the LSA and RSA that have the size, scope of goods, services and experience required by the project during construction and operations.

17.7.2.2 Traffic and Transportation Infrastructure

The majority of oil sands projects near Conklin will use Highway 881 and oil sands development roads during project construction and the operations. The combined effects of project construction overlapping with construction traffic associated with other oil sands development in southern RMWB near Conklin is estimated to result in a two fold increase in AADT on Highway 881 near Conklin but the volume will remain well below the highway's design specifications. However, this increase could create short-term traffic policing challenges for the regional RCMP detachments.

The project's contribution to cumulative traffic effects during the operation phase will be very small and no additional mitigation is required.

17.7.2.3 Health Services

Construction phase activities typically represent a higher risk of accident and injury than does routine operations. Project mitigation measures should attenuate direct affects as discussed above and the project's contribution to cumulative effects should be minor and no specific additional mitigation is suggested. Since the Lac La Biche Medical Centre has reported past peaks in demand for services from regional construction activity, the cumulative demand of the project construction phase combined with other activities could present some short-term management challenges for Lac La Biche medical services.

17.8 Summary

The project will have positive economic effects at the provincial, regional and local level. The project will create an increase in employment, labour income and GDP. KNOC's socio-economic objectives consider hiring qualified local workforce, contractors and services for construction and operations and opportunities. The project's economic effects will have a positive direction with a moderate magnitude, short term during the construction phase and long term during the operation phase ([Table 17.8-1](#)).

During the construction phase, the construction workforce will be housed in a construction camp near the site. They will increase the shadow population but will have no regional effects on demography. There will be some additional demand for industry training offered by local colleges, this effect is positive as local colleges in the RSA have ample capacity to address oil sands industry's demand for training courses. The Camp will have a utility services plan that includes trucking wastewater and solid waste to either Lac La Biche or the RMWB and supply of portable water from either Lac La Biche or RMWB, this will create regional low magnitude effect on utility services in the RSA.

KNOC identified a list of mitigation measures that will reduce any potential effect on roads and transportation including a bussing plan. With the identified mitigation measures the effects on traffic will have low magnitude short term effect during construction and long term during operation. KNOC's internal policies particularly respectful workplace and camp policy and alcohol and substance abuse policy will minimize any additional pressure created by KNOC on protective services in the RSA.

Table 17.8-1: Summary of Project Effects During Construction and Operation

| Valued Component | Direction | Geographic Extent | Magnitude | Duration | Reversible | Frequency | Confidence | Overall Impact Rating (after Mitigation) |
|--|-----------|---------------------|-----------|------------|------------|------------|------------|--|
| Construction Phase | | | | | | | | |
| Demography | Neutral | Regional | Low | Short Term | Yes | Continuous | High | Low |
| Education | Positive | Regional | Low | Short Term | No | Continuous | High | NA |
| Housing | Neutral | Regional | Low | Short Term | Yes | Continuous | High | Neutral |
| Utilities | Negative | Regional | Low | Short Term | Yes | Continuous | High | Low |
| Traffic Volume and Transportation Infrastructure | Negative | Regional | Moderate | Short Term | Yes | Continuous | High | Low |
| Protective Services | Neutral | Regional | Low | Short Term | Yes | Continuous | High | Low |
| Health | Neutral | Regional | Low | Short Term | Yes | Continuous | High | Low |
| Economic | Positive | Provincial/Regional | Low | Short Term | No | Continuous | High | NA |
| Operation Phase | | | | | | | | |
| Demography | Neutral | Regional | Low | Long Term | Yes | Continuous | High | Low |
| Education | Positive | Regional | Low | Long Term | No | Continuous | High | NA |
| Housing | Neutral | Regional | Low | Long Term | Yes | Continuous | High | Neutral |
| Utilities | Negative | Regional | Low | Long Term | No | Continuous | High | Low |
| Roads and Transportation | Negative | Regional | Moderate | Long Term | Yes | Continuous | High | Low |
| Protective Services | Neutral | Regional | Low | Long Term | Yes | Continuous | High | Low |
| Health | Neutral | Regional | Low | Long Term | Yes | Continuous | High | Low |
| Economic | Positive | Provincial/Regional | Low | Long Term | No | Continuous | High | NA |

KNOC construction and operation camps will include fully equipped first aid facility staffed with a trained medical personnel, and an ambulance or dedicated vehicle for ground transportation of workers to nearest hospital. As a result, KNOC will have neutral effects on health services in the RSA.

The project will have positive economic effects on the LSA as it will generate some economic benefits for some local businesses. It will have negligible effects on education, health care, protective services, utilities and roads in LSA as most of those services are administered and delivered from either the RMWB or Lac La Biche County.

The presence of nine other oil sands projects in the LSA will have cumulative effects on economy, ground transportation and health services. The competition for skilled labour during project construction and operations will be a challenge for KNOC and the other oil sands developers in the region. However, KNOC is confident that it can effectively compete for skilled labour needed during construction and operations phases of the project through provision of competitive wages and benefits, well run camps with security, medical and amenities as well as respectful workplace and camp policies. It will also create a short term increase in traffic during the construction phase which is well below the design specifications of Highway 881 and a low magnitude effects with long term duration during the operation phase.

17.9 Literature Cited

- Alberta Employment and Immigration. 2009. *Alberta Labour Force Statistics July 2009*. Available from: http://www.employment.alberta.ca/documents/LMI/LMI-LFS_0709_public_package.pdf. Accessed August 2009.
- Alberta Energy Company (AEC). 1999. Application for the Approval of the Foster Creek Commercial In-Situ Oil Sands Project. Prepared by EBA Engineering Consultants Ltd. for AEC (subsidiary of EnCana Corporation). Edmonton, Alberta.
- Alberta First. 2008. Lac La Biche County. Available at: <http://www.albertafirst.com/profiles/statspack/20681.html>. Accessed April 8, 2008.
- Alberta Transportation. 2009. Project Info Interactive Version. Available from: http://www.transportation.alberta.ca/projects/northeast_flash.html Accessed September 2009.
- Alberta Transportation. 2009a. *Traffic Volume History*. Available from: <http://www.transportation.alberta.ca/Content/docType181/production/TVH2008.pdf>. Accessed 2009.
- Austrom Consulting Ltd. 2007. *Town of Lac La Biche and Lakeland County Amalgamation Study*. Available at: <http://www.townllb.com/Website/>. Accessed April 9, 2008.
- Canadian Natural Resources Ltd (CNRL). 2007. Application for the Kirby In-Situ Oil Sands Project. Submitted to the Alberta Energy Utilities Board and Alberta Environment. Prepared by Golder Associates Ltd. Calgary, Alberta.

- Community of Conklin. 2008. *Metis Local #193 Issue Management Process: Summary Report*. Prepared by Tumbleweed Consulting. December 2008.
- ConocoPhillips Canada. 2008. *Surmont In-Situ Oil Sands Project Phase 2 Amendment*. Submitted to Alberta Energy Resources Conservation Board and Alberta Environment. Calgary, Alberta.
- Devon ARL Corporation (Devon). 2006a. *Application for the Approval of the Devon Jackfish 2 Project*. Submitted to the Alberta Energy Utilities Board and Alberta Environment. Calgary, Alberta.
- Devon Canada Corporation (Devon). 2006b. *Devon Jackfish Project. Volume 2: Environmental Impact Assessment*. Prepared for Devon Canada Corporation. Calgary, Alberta.
- Doyle, J. 2009. Planning and Development, RMWB. Personal communication.
- Dumaresq, K. 2009. Research Analyst: Economic Development, Policy and Analysis, Alberta Finance and Enterprise. Personal communication.
- Eaton, M. 2009. Fort McMurray Public School District. Personal communication.
- Edmonton Journal. 2009. Province unveils Fort Mac. Available from: [expansionhttp://www.edmontonjournal.com/business/Sound+Fort+McMurray+expansion/2038209/story.html](http://www.edmontonjournal.com/business/Sound+Fort+McMurray+expansion/2038209/story.html) Accessed October, 2009.
- EnCana Corporation (EnCana). 2007. *EnCana Borealis Project: Socio-Economic Impact Assessment*. Prepared for EnCana Corporation. Calgary, Alberta.
- EnCana Corporation. 1998. *Christina Lake Thermal Project*. Prepared by Golder Associates Ltd. Calgary, Alberta.
- Enerplus Resources Fund. 2008. *Kirby Oilsands Project Phase 1*. Environmental and Social Information. Vol. 2B. Prepared by Golder Associates Ltd. Calgary, Alberta.
- Gagnon, F. 2009. Fort McMurray Catholic School. Personal communication
- Gordon, G. 2009. Planning Department, RMWB. Personal communication.
- Government of Alberta. 2006. *Investing in our Future: Responding to the Rapid Growth of Oilsands Development*. Available at: http://www.alberta.ca/home/documents/Investing_in_our_Future_Section5.pdf. Accessed March 25, 2008.
- Government of Alberta. 2007. *Funding for Fort McMurray Helps Meet Urgent Needs Brought on by Oilsands*. Available at <http://www.gov.ab.ca/acn/200702/21083FEE10ED0-02C5-4D66-36A829A8522FEDCE.html> Accessed March 25, 2008.
- Guerin, R. 2009. Water Rural Foreman, Public Works, RMWB. Personal communication.
- Howell, J. 2009. Principal, Conklin Local School. Personal communication.

- Indian and Northern Affairs Canada (INAC). 2009. *List of Reserves in Alberta*. Available at: http://pse2-esd2.ainc-inac.gc.ca/FNProfiles/FNProfiles_ListRE.asp?Province1=AB.html Accessed February 2009.
- Innes, V. 2009. Executive Director- Northern Lights Health Foundation, Alberta Health Services. Personal communication.
- Kahn, M. 2009. Planning Department, RMWB. Personal communication.
- Kissel, C. 2009. Lac La Biche Maintenance, Alberta Transportation. Personal communication.
- Klein, T. 2009. Protective Services, Fort McMurray. Personal communication
- Kolenosky, B. 2009. Community Services, Lac La Biche County. Personal communication.
- Lac La Biche County. 2008. *Economic Development Partnership*. Available from: http://www.lac labicheregion.com/pdf/ecdev/dev_package.pdf. Accessed August, 2009.
- Lozinski, L. 2009. Lac La Biche County, Sustainable Resources Development. Personal communication.
- MacRae, C. 2008. Alberta Transportation. Personal communication.
- Matrix Solutions. 2008. *Social Baseline and Potential Cumulative Development Scenario for Lac La Biche County*. Prepared for Lac La Biche Regional Industry Consultation Committee. Lac La Biche, Alberta.
- MEG Energy Corp. 2005. *Application for Approval of the Christina Lake Regional Project*. – Phase 3. Volume 5: The Human Environment. Submitted to the Alberta Energy Utilities Board and Alberta Environment. Prepared by Golder Associates Ltd. Calgary, Alberta.
- Moehrle, G. 2009. Lac La Biche Health Care Centre. Personal communication.
- Nicholas Applied Management. 2008. Lac La Biche Multiplex Educational. Available from: http://www.lac labicheregion.com/multiplex/4_pg_ad.pdf. Accessed 2008.
- North American Oilsands Corporation (NAOSC). 2007. *Application for Approval of the Kai Kos Dehseh SAGD Project*. Submitted to Alberta Energy and Utilities Board and Alberta Environment. Prepared by Matrix Solutions Inc. Calgary, Alberta.
- Oilsand Developers Group (ODG). 2009. *Oilsands: An Industry Overview*. Available from: <http://www.clubrunner.ca/Data/5370%5C460%5CHTML%5C52208%5CFort%20McMurray%20Rotary%20Club%20Jan%2028%202009.ppt#0>. Accessed February, 2009.
- Petrobank Energy & Resources Ltd. 2008. Application for the Approval of the May River Phase 1 Project. Submitted to the Alberta Energy Utilities Board and Alberta Environment. Prepared by AMEC Earth & Environmental. Calgary, Alberta.
- Piquette, J. 2009. Lac La Biche Remax Real Estate. Personal communication.

- Portage College. 2009. Press Release: Application and Acceptance Numbers Increase at Portage College. Copy on file with College. Lac La Biche, Alberta.
- Regional Municipality of Wood Buffalo (RMWB). 2002. Conklin Area Structure Plan. Conklin, AB. http://www.woodbuffalo.ab.ca/business/land_development/pdf/Conklin1.pdf. Accessed 2008.
- Regional Municipality of Wood Buffalo (RMWB). 2003. Regional Profile. Available at: http://www.woodbuffalo.ab.ca/residents/regional_profile/RegionalProfile.pdf. Accessed March 5, 2008.
- Regional Municipality of Wood Buffalo (RMWB). 2006. Municipal Census: 2006. Available at: http://www.woodbuffalo.ab.ca/business/demographics/pdf/2006_census.pdf. Accessed March 3, 2008.
- Regional Municipality of Wood Buffalo (RMWB). 2007a. Budget 2007. Available at: http://www.woodbuffalo.ab.ca/municipal_government/publications/pdf/2008_budget_new_sletter.pdf. Accessed April 3, 2008.
- Regional Municipality of Wood Buffalo (RMWB). 2007b. Municipal Census. Available at: http://www.woodbuffalo.ab.ca/business/demographics/pdf/2007_census_RMWB.pdf. Accessed February, 2009.
- Regional Municipality of Wood Buffalo (RMWB). 2007c. Highway 63/881 Corridor Area Structure Plan. http://www.woodbuffalo.ab.ca/business/land_development/pdf/hwy_63-881_ASP.pdf. Accessed 2008.
- Regional Municipality of Wood Buffalo (RMWB). 2008a. Municipal Government. Available at: http://www.woodbuffalo.ab.ca/municipal_government/index.asp. Accessed April 3, 2008.
- Regional Municipality of Wood Buffalo (RMWB). 2008b. Community Economic Profile. Available at: <http://sethiresearch.com/RMWB%20economic%20profile.pdf>. Accessed April 3, 2008.
- Regional Municipality of Wood Buffalo (RMWB). 2008c. Community Profiles. Available at: http://www.woodbuffalo.ab.ca/visitors/wood_buffalo_communities/anzac.asp?subnav=14. Accessed April 3, 2008.
- Regional Municipality of Wood Buffalo (RMWB). 2009a. Infrastructure Projects. Available at: http://www.woodbuffalo.ab.ca/residents/infrastructure_projects/index.asp?subnav=46. Accessed February 2009.
- Regional Municipality of Wood Buffalo (RMWB). 2009b. Future Municipal Growth: Fringe Study. Available at: http://www.woodbuffalo.ab.ca/business/land_development/future_muni_growth.asp?subnav=8. Accessed 2008.
- Regional Municipality of Wood Buffalo (RMWB). 2009c. Municipal Census: 2008. Available at: http://www.woodbuffalo.ab.ca/business/demographics/pdf/2008_municipal_census.pdf. Accessed September, 2009.

- Statistics Canada. 2001a. Aboriginal Population Profiles. Available at: http://www12.statcan.ca/english/Profil01/CP01/Search/SearchForm_Results.cfm?Lang=E. Accessed April 1, 2008.
- Statistics Canada. 2001b. Community Profiles. Available at: http://www12.statcan.ca/english/Profil01/CP01/Search/SearchForm_Results.cfm?Lang=E. Accessed April 1, 2008.
- Statistics Canada. 2006a. Aboriginal Population Profiles. Available at: http://www12.statcan.ca/english/census06/data/profiles/aboriginal/Search/SearchForm_Results.cfm?Lang=E. Accessed April 1, 2008.
- Statistics Canada. 2006b. Community Profiles. Available at: http://www12.statcan.ca/english/census06/data/profiles/community/Search/SearchForm_Results.cfm?Lang=E. Accessed April 1, 2008.
- Statistics Canada. 2006c. Input/Output Division. 2005 Interprovincial Input-Output (I-O) Model (Open Version). Alberta Finance and Enterprise, Economics and Statistics, Edmonton, Alberta, Canada.
- Sutherland, B. 2009. Lac La Biche Detachment, RCMP. Personal communication.
- Taylor, R. 2009. Northern Lights School, Division No. 69. Personal communication.
- Theberge, C. 2009. Community Services, RMWB. Personal communication.
- Thomas, R. 2009. Keyano College. Personal communication.
- Tremblay, W. 2009. Community Services Department in Conklin: RMWB. Personal communication.
- Watts, T. 2009. Regional emergency preparedness coordinator in Northern Zone, Alberta Health Services. Personal communication.