

## *Appendix 14-A*

*Murray River Coal Project: 2013 Socio-economic Baseline Report*

MURRAY RIVER COAL PROJECT

**Application for an Environmental Assessment Certificate / Environmental Impact Statement**

HD Mining International Ltd.

# MURRAY RIVER COAL PROJECT 2013 Socio-economic Baseline Report



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# MURRAY RIVER COAL PROJECT

## 2013 SOCIO-ECONOMIC BASELINE REPORT

May 2013  
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**Prepared for:**



HD Mining International Ltd.

**Prepared by:**



**Engineers and Scientists**

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Vancouver, British Columbia

# Executive Summary

# Executive Summary

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HD Mining International Ltd. (HD Mining) proposes to develop the Murray River Coal Project (the Project) as a 6 million tonne per annum (6 Mtpa) underground metallurgical coal mine. The property is located approximately 12.5 km south of Tumbler Ridge, British Columbia. The Project is located within the Peace River Coalfield (PRC), an area with a long history of metallurgical grade coal mining, mainly from open pit mining. HD Mining is proposing to access deeper zones of the coal field (600 to 1,000 m below surface) through underground mining techniques.

To support HD Mining's planning and development of the Project, and to contribute to the environmental assessment process, environmental and socio-economic baseline studies were initiated by Rescan Environmental Services Ltd. (Rescan). Project-specific studies began in 2010 and have continued through 2012. As appropriate and available, historical data from government sources and neighbouring projects, as well as traditional use/knowledge information, have been compiled and incorporated into analysis.

This report presents a cumulative summary of the social and economic information and data compiled for the Project to date.

An understanding of the current social and economic conditions in the area around the Project is necessary in order to conduct a sound assessment of Project's potential effects on regional and local economies, demographics, infrastructure, service delivery capacity, as well as community well-being.

The objectives of socio-economic baseline studies are to:

- characterise regional and local social and economic conditions within the Project area;
- incorporate information obtained through interviews with community service providers and local governments; and
- gain a sufficient understanding of the socio-economic environment upon which to base the effects assessment.

Socio-economic conditions were characterized within a regional study area (RSA) and local study area (LSA) in order to predict the Project's potential effects. The study includes information and data related to the following areas: population and demographics; education, skills and training (level of achievement, elementary, secondary, post-secondary, and adult education); business environment and employment; income and earnings; health and social services (facilities, services, trends, and issues); recreation; protection services (police, fire, and ambulance); and infrastructure (utilities, communications, transportation, and housing).

In 2011, the goods sector represented 24% of the provincial GDP, with the mining industry contributing 14% of the provincial goods sector GDP. Mining, oil, and gas extraction jobs provided over 5.5% of employment in the goods sector in 2011, with most goods sector jobs being in construction and manufacturing.

The RSA has traditionally been dependent on primary resource industries. Development within the RSA has been driven in recent years by coal mining and exploration, as well as growth in oil and gas activities. Forestry, renewable energy (hydro and wind), and tourism also play an important role. All of these industries together contribute over \$18 billion to the Province's Gross Domestic Product (GDP). Mining and oil and gas extraction account for nearly \$4.9 billion, or 3.1% of the Province's entire GDP.

The Project falls within the District of Tumbler Ridge and within the District's Official Community Plan (OCP). Other municipalities within the LSA include Fort St. John, Dawson Creek, Chetwynd and Tumbler Ridge. Services among communities vary considerably depending on their size. Fort St. John, Dawson Creek, and to a lesser extent Chetwynd, provide a wider range of services, including services for mining, oil and gas, agriculture, and forestry, as well as facilities and accommodation. The number of recreation, health, social, and educational services within communities has increased in parallel with increases in population. There are regional hospitals in Fort St. John and Dawson Creek, and there are health clinics in Chetwynd and Tumbler Ridge.

The West Moberly First Nations, Saulneau First Nations, and the McLeod Lake Indian Band reside on Indian reserves within the LSA. The proportion of Aboriginal people in the RSA is higher relative to the Province as a whole; however, populations on Indian reserves within the LSA are lower compared to populations living in larger communities in the region.

Communities within the RSA are connected by paved highways. The Alaska Highway connects the region to Alaska (via the Yukon) and Alberta. Highway capacity currently meets the regional demand; however, improvements to the highway network are being planned due to increased levels of economic activity. Dawson Creek and Fort St. John have major airports capable of handling jets, while Chetwynd and Tumbler Ridge have smaller airstrips. The Canadian National Rail line runs east-west through Dawson Creek and Chetwynd, with a north-south branch running through Fort St. John.

Populations of communities in the region have generally seen a rebound in the last five years after seeing declines in the 1990s. This decline occurred after the drop in world coal prices and the closure of mines in the region. This decline was most evident in Tumbler Ridge; however, with the return of higher coal prices and resulting revitalization of mining activity in the region, the population of Tumbler Ridge has seen the sharpest rise in population compared to other communities in the LSA.

There are primary and secondary schools in many communities in the LSA. There are no elementary or secondary schools, however, on Indian reserves within the LSA; students from these communities attend classes in Moberly Lake, Chetwynd, or Mackenzie. The University of Northern British Columbia (UNBC) has a satellite campus in Fort St. John, while Northern Lights College (NLC), based in Dawson Creek, has campuses in Fort St. John, Chetwynd and Tumbler Ridge. Communities in the LSA, and Aboriginal communities in particular, exhibit lower levels of education compared to provincial figures. Education in the trades is generally higher, and in some cases, much higher than the provincial average. The School Districts in the RSA have partnered with post-secondary institutions and heavy industry to help advance education for secondary students wishing to enter the industrial labour force.

# Acknowledgements

## Acknowledgements

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This report was prepared for HD Mining International Ltd. by Rescan Environmental Services Ltd., an ERM Company. Fieldwork for the Socio-economic baseline studies was conducted by Jeremy Pittman (M.Sc.) and Maurice DePaoli (BA, CAHP). The report was written by Maurice DePaoli and reviewed by Andrew Robinson (MSc., B.A.). The EA of the Project is managed by Jason Rempel (M.Sc., P.Geo.) and directed by Anne Currie (MPA, BSc, Honours).



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# MURRAY RIVER COAL PROJECT

## 2013 SOCIO-ECONOMIC BASELINE REPORT

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# Glossary and Abbreviations



## Glossary and Abbreviations

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Terminology used in this document is defined where it is first used. The following list will assist readers who may choose to review portions of the document.

<b>BC</b>	British Columbia
<b>BCMA</b>	British Columbia Mining Association
<b>BC MEMPR</b>	British Columbia Ministry of Energy, Mines and Petroleum Resources
<b>BC MFLNRO</b>	British Columbia Ministry of Forest, Lands and Natural Resource Operations
<b>BC MOTI</b>	British Columbia Ministry of Transportation and Infrastructure
<b>CA</b>	Charter of Accountants
<b>CAO</b>	Chief Administration Officer
<b>CAP</b>	Community Access Program
<b>CAPP</b>	Canadian Association of Petroleum Producers
<b>HD Mining</b>	HD Mining International Ltd.
<b>CN Rail</b>	Canadian National Railway
<b>Development Region</b>	A geographic area within British Columbia for which census data are tabulated and disseminated. There are eight Development Regions in British Columbia, which are aggregations of more than one Regional District. They have the same boundaries as the Economic Regions observed by Statistics Canada.
<b>DTR</b>	District of Tumbler Ridge
<b>EA</b>	Environmental Assessment
<b>FSJ</b>	Fort St. John
<b>GDP</b>	gross domestic product
<b>HSDA</b>	Health Service Delivery Area
<b>IPGDC</b>	Initiatives Prince George Development Corporation
<b>IR</b>	Indian Reserve
<b>LHA</b>	Local Health Area
<b>LSA</b>	Local study area
<b>MARR</b>	Ministry of Aboriginal Relations and Reconciliation
<b>Mi</b>	Miles
<b>MiHR</b>	Mining and Industry Human Resources Council
<b>MLIB</b>	McLeod Lake Indian Band
<b>Mtpa</b>	Million tonne per annum
<b>NAICS</b>	North American Industrial Classification System

## 2013 SOCIO-ECONOMIC BASELINE REPORT

<b>NDIT</b>	Northern Development Initiative Trust
<b>NHA</b>	Northern Health Authority
<b>NLC</b>	Northern Lights College
<b>NPEDC</b>	North Peace Economic Development Commission
<b>OCP</b>	Official Community Plan
<b>PRC</b>	Peace River Coalfield
<b>PRRD</b>	Peace River Regional District
<b>PYLL</b>	Potential Years of Life Post
<b>Rescan</b>	Rescan Environmental Services Ltd.
<b>RCMP</b>	Royal Canadian Mounted Police
<b>RSA</b>	Regional study area
<b>SD</b>	School District
<b>SFN</b>	Saulteau First Nations
<b>SPEDC</b>	South Peace Economic Development Commission
<b>RV</b>	recreational vehicle
<b>T8TA</b>	Treaty 8 Tribal Association
<b>TSA</b>	Timber Supply Area
<b>TMW</b>	Thunder Mountain Wind
<b>UNBC</b>	University of Northern British Columbia
<b>WMFN</b>	West Moberly First Nations

# 1. Introduction

# 1. Introduction

---

HD Mining International Ltd. (HD Mining) proposes to develop the Murray River Coal Project (the Project) as a 6 million tonne per annum (6 Mtpa) underground metallurgical coal mine. The property is located approximately 12.5 km south of Tumbler Ridge, British Columbia (BC; Figure 1-1), and consists of 57 coal licences covering an area of 16,024 hectares. The Project is located within the Peace River Coalfield (PRC), an area with a long history of metallurgical grade coal mining, mainly from open pit mining. HD Mining is proposing to access deeper zones of the coal field (600 to 1,000 m below surface) through underground mining techniques.

In October 2011, HD Mining submitted an application to the BC Ministry of Energy and Mines and Ministry of Environment seeking permission to complete a bulk sampling program as part of exploration of the property. In March 2012, HD Mining received approval to conduct a 100,000 tonne bulk sample for the purpose of conducting testing to assist in developing markets for the coal.

Beyond the bulk sample program, in order to develop a full mine at the proposed 6 Mtpa, the Project is subject to both the BC and Canadian environmental assessment (EA) processes. Development of any infrastructure for the full mine is not permitted before the requirements of these processes are met.

To support HD Mining's planning and development of the Project, and to contribute to the EA process, environmental and socio-economic baseline studies were initiated by Rescan Environmental Services Ltd. (Rescan). Project-specific studies began in 2010 and have continued through 2012. As appropriate and available, historical data from government sources and neighbouring projects, as well as traditional use/knowledge information, have been compiled and incorporated into analysis.

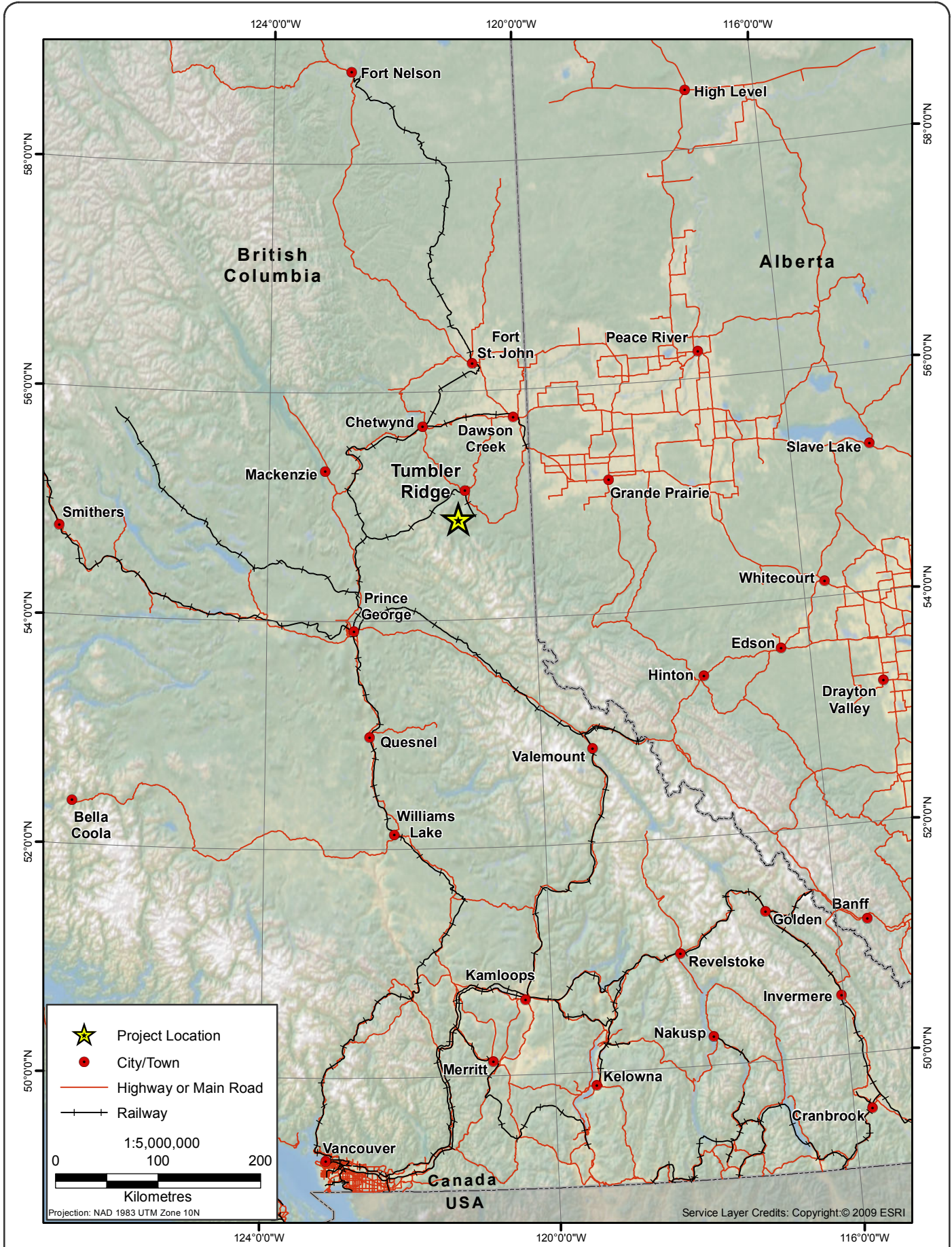
This report presents a cumulative summary of the social and economic information and data compiled for the Project to date. It includes information and data related to the following areas: population and demographics; education, skills and training (level of achievement, elementary, secondary, post-secondary, and adult education); business environment and employment; income and earnings; health and social services (facilities, services, trends, and issues); recreation; protection services (police, fire, and ambulance); and infrastructure (utilities, communications, transportation, and housing).

An understanding of the current social and economic conditions in the area around the Project is necessary in order to conduct a sound assessment of Project's potential effects on regional and local economies, demographics, infrastructure, service delivery capacity, as well as community well-being.

The objectives of socio-economic baseline studies are to:

- characterise regional and local social and economic conditions within the Project area;
- incorporate information obtained through interviews with community service providers and local governments; and
- gain a sufficient understanding of the socio-economic environment upon which to base the EA.

The following chapters outline the regulatory and policy framework that supports the study (Chapter 2); a description of the methods and rationale used to identify and collect social and economic data (Chapter 3); the results of data collection (Chapter 4); and a summary that synthesizes the key findings of the baseline program (Chapter 5).



## 2. Regulatory and Policy Framework

## 2. Regulatory and Policy Framework

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The BC *Environmental Assessment Act* (2002) requires proponents to assess potential economic and social effects. The BC *Environmental Assessment Act* (2002) does not prescribe the specific social and economic effects to be assessed. Guidance is provided in the BC Environmental Assessment Office's *User Guide* (BC EAO 2011) as well as their *Application Information Requirements Template* (BC EAO 2010).

To address federal interests, socio-economic data were collected based on Health Canada's *Canadian Handbook on Health Impact Assessment* (Health Canada 2004). The guide's determinants of health include: employment and working conditions, income and social status, education, physical environment, healthy child development, biology and genetic endowment, health services, personal health practices and coping skills, and social support networks.

## 3. Methodology



## 3. Methodology

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### 3.1 STUDY AREAS

Social and economic baseline data is included for both a regional study area (RSA; the Peace River Regional District [PRRD]) and local study area (LSA) communities.

#### 3.1.1 Regional Study Area - Peace River Regional District

The RSA incorporates the PRRD. The Project is located within the boundaries of the PRRD (see Figure 3.1-1) and will rely on the RSA for human resources, supplies, services and other requirements. The PRRD is the largest regional district in the province (119,000 km<sup>2</sup>). It provides services to areas outside of municipalities and works with municipalities and rural electoral areas to ensure the provision of shared services (PRRD n.d.).

The RSA relies on primary industries, including oil and gas and mineral exploration and mining, hydro-electric and wind power generation, forestry, agriculture, and to a lesser extent tourism and manufacturing (PRRD n.d.).

#### 3.1.2 Local Study Area

The LSA includes several communities located within the RSA. The communities included in the study were selected by considering their proximity to the Project and access requirements, as well as their expected role in construction, operation and closure (e.g., provision of labour and supplies). The study communities include both municipalities and Indian Reserves.

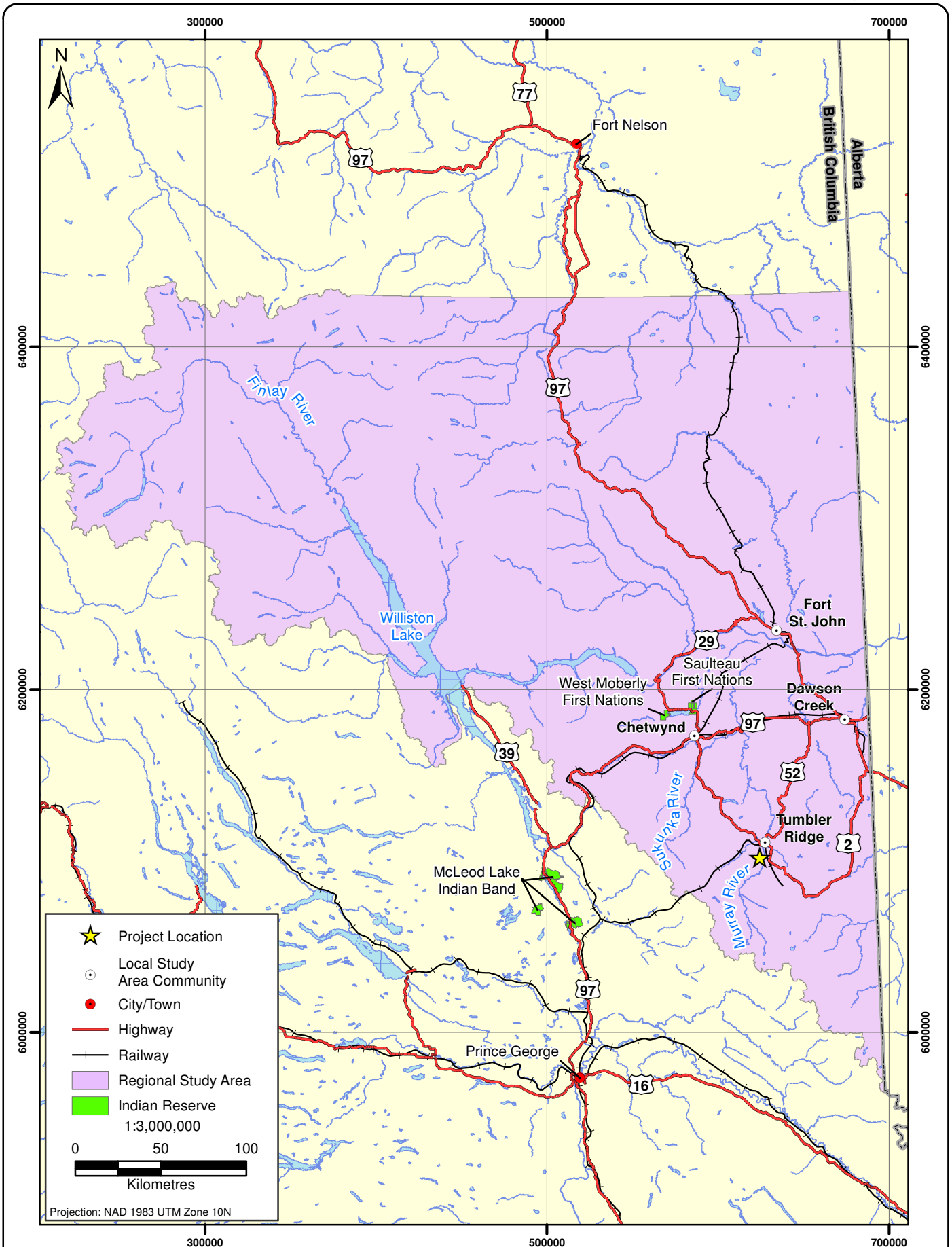
The following municipalities and Indian Reserves are included in the LSA:

- District of Tumbler Ridge;
- City of Dawson Creek;
- District of Chetwynd;
- City of Fort St. John;
- West Moberly Lake IR 168A (West Moberly First Nations [WMFN]);
- East Moberly Lake IR 169 (Saulteau First Nations [SFN]); and
- McLeod Lake IR 1 (McLeod Lake Indian Band [MLIB]).

### 3.2 APPROACH

Data and information for the study was collected through both desk-based research and information interviews with key informants.

Table 3.2-1 summarizes socio-economic components considered in this study. At the regional level, baseline information focuses on relevant demographic, labour force and economic characteristics of these study areas, as well as regional transportation networks and broader health and social trends.



- Project Location
- Local Study Area Community
- City/Town
- Highway
- Railway
- Regional Study Area
- Indian Reserve  
1:3,000,000

0 50 100  
Kilometres

Projection: NAD 1983 UTM Zone 10N



**MURRAY RIVER COAL PROJECT**

### Regional Study Area and Local Study Area Communities

Figure 3.1-1



**Table 3.2-1. Socio-economic Components**

Component	Description
Context	Location, history and other relevant information pertaining to the study communities
Population and Demographics	Demographic patterns (median age, gender), rates of changes, population estimates and projections, Aboriginal identity and visible minorities.
Governance	Structure of governance, election frequency, community planning, and operating budgets.
Education	Primary, secondary and post-secondary institutions, and educational attainment.
Employment	Labour force characteristics including size, participation in economy, employment and unemployment rates, and employment sectors
Income and earnings	Income and earnings and main sources of income
Economy and business environment	Economic foundations of the local and regional economies, and trends over time, including characterization of industry and business
Social and health	Social and health services, health indicators and recorded occurrences of illnesses/diseases, and social indicators including substance abuse and crime.
Infrastructure	Housing, recreational facilities, utilities, transportation and communication infrastructure
Emergency and protection services	Police, fire, ambulance and other protective services

### 3.2.1 Desk-based Research

Desk-based research was conducted between August 2010 and April 2013. This work included reviewing and compiling relevant socio-economic information from Statistics Canada (Stats Can), BC Stats, PRRD publications, Aboriginal Affairs and Northern Development Canada (AANDC), private sector and professional association reports, and Internet publications. Information was also gathered from other EA Applications for projects located in the vicinity of the Project.

Throughout the research process, information and data gathered were triangulated, or verified using multiple sources, in order to confirm the accuracy of information and data and to remove the potential for bias that arises through the use of single source information.

The selection of indicators was influenced by the availability and reliability of information and data. Table 3.2-2 provides a list of indicators used for this report and their sources.

### 3.2.2 Information Interviews

Primary research was undertaken to fill data gaps after completing secondary research and to confirm the results of this research. Primary research consisted of telephone and face-to-face interviews with key informants in communities in the LSA. Key informants are defined as individuals with specific knowledge and experience concerning a particular socio-economic component as a result of their professional capacity and/or role in their community.

Interviews were conducted during April 2012 in Tumbler Ridge, Chetwynd, Dawson Creek, and Fort St. John. Telephone interviews were conducted from May to July of 2012 with knowledge holders in Tumbler Ridge and Fort St. John. Twenty-five people were interviewed, including municipal, regional, and provincial representatives, service providers, business leaders and members of economic development organizations and chambers of commerce. Representation was achieved across a number of areas including: economic development; education and training; health; housing; emergency services; and planning and resource management. Table 3.2-3 provides a list of the organizations interviewed.

Table 3.2-2. Socio-economic Indicators

Topic	Indicators*	Sources
Population	<ul style="list-style-type: none"> <li>Community population</li> <li>Community demographics (age, sex, Aboriginal identity, visible minorities)</li> <li>Population estimates and projections</li> </ul>	<ul style="list-style-type: none"> <li>Canada census (2001, 2006, 2011)</li> <li>Stats Can Aboriginal Population Profile (2001, 2006)***</li> <li>AANDC</li> <li>BC Stats</li> <li>Peace River Regional District</li> <li>Municipal websites (Tumbler Ridge, Dawson Creek, etc.)</li> </ul>
Economy	<ul style="list-style-type: none"> <li>Potential labour force</li> <li>Active labour force</li> <li>Participation rate</li> <li>Employment rate</li> <li>Unemployment rate</li> <li>Income (range, median)</li> <li>Earnings (range, median, sources)</li> <li>Employment sectors</li> <li>Occupations</li> <li>Participation in mining employment</li> <li>Characteristics of local and regional business and industry</li> </ul>	<ul style="list-style-type: none"> <li>Census of Canada (2001, 2006, 2011)</li> <li>Stats Can Aboriginal Population Profiles (2001, 2006)**</li> <li>AANDC</li> <li>BC Stats</li> <li>Peace River Regional District</li> <li>BC Ministry of Energy, Mines and Natural Gas</li> <li>BC Ministry of Forests, Lands and Natural Resource Operations</li> <li>Municipal websites (Tumbler Ridge, Dawson Creek, etc.)</li> <li>North Peace and South Peace Economic Development Commissions</li> <li>Ministry of Jobs, Tourism and Skills Training</li> <li>Trade and Invest BC</li> <li>Primary qualitative research/interviews</li> </ul>
Economic Services	<ul style="list-style-type: none"> <li>Business support</li> <li>Economic development organizations</li> <li>Employment support</li> </ul>	<ul style="list-style-type: none"> <li>Census of Canada (2001, 2006, 2011)</li> <li>BC Stats and other provincial ministries</li> <li>North Peace Economic Development Commission</li> <li>South Peace Economic Development Commission</li> <li>Peace-Liard Community Futures</li> <li>Dawson Creek Chamber of Commerce</li> <li>Municipal websites (Tumbler Ridge, Dawson Creek, etc.)</li> <li>Primary qualitative research/interviews</li> </ul>
Education	<ul style="list-style-type: none"> <li>Levels of attainment</li> <li>Facilities</li> <li>Availability of adult education and training programs</li> <li>Availability of early childhood education programs</li> <li>Availability of trades/technical programs and workshops</li> </ul>	<ul style="list-style-type: none"> <li>Canada census (2001, 2006, 2011)</li> <li>Stats Can Aboriginal Population Profile (2001, 2006)***</li> <li>Post-secondary facility websites (University of Northern British Columbia, Northern Lights College, etc.)</li> <li>School districts</li> <li>Municipal websites (Tumbler Ridge, Dawson Creek, etc.)</li> <li>Primary qualitative research or interviews</li> </ul>
Social and Community Services**	<ul style="list-style-type: none"> <li>Program types</li> <li>Program availability</li> <li>Community service providers</li> <li>Recreational facilities and services</li> <li>Policing capacity</li> <li>Emergency services</li> </ul>	<ul style="list-style-type: none"> <li>BC Stats</li> <li>BC Ministry of Health</li> <li>Municipal websites (Tumbler Ridge, Dawson Creek, etc.)</li> <li>Primary qualitative research or interviews</li> </ul>
Social Issues	<ul style="list-style-type: none"> <li>Crime rates and types</li> <li>Available community and support services and networks</li> <li>Prevalence of substance misuse</li> </ul>	<ul style="list-style-type: none"> <li>BC Stats</li> <li>BC Ministry of Health</li> <li>Primary qualitative research or interviews</li> </ul>

(continued)

**Table 3.2-2. Socio-economic Indicators (completed)**

Topic	Indicators*	Sources
Health Services	<ul style="list-style-type: none"> <li>• Number and type of facilities</li> <li>• Number and type of health care providers</li> <li>• Program types</li> </ul>	<ul style="list-style-type: none"> <li>• BC Stats</li> <li>• BC Ministry of Health</li> <li>• Primary qualitative research or interviews</li> </ul>
Health Issues	<ul style="list-style-type: none"> <li>• Types of common illness, disease, and injury</li> <li>• Prevalence of substance misuse</li> </ul>	<ul style="list-style-type: none"> <li>• BC Stats</li> <li>• BC Ministry of Health</li> <li>• Primary qualitative research or interviews</li> </ul>
Infrastructure	<ul style="list-style-type: none"> <li>• Housing availability and conditions</li> <li>• Total households</li> <li>• Occupied private dwellings (detached, semi-detached, and row houses, duplexes, and apartments)</li> <li>• Constructed before or after 1986</li> <li>• Utilities (power, water, and communications)</li> <li>• Air service facilities</li> </ul>	<ul style="list-style-type: none"> <li>• Canada census (2001, 2006, 2011)</li> <li>• Stats Can Aboriginal Population Profile (2001, 2006)***</li> <li>• BC Stats</li> <li>• Municipal websites (Tumbler Ridge, Dawson Creek, etc.)</li> <li>• Primary qualitative research or interviews</li> <li>• Ministry of Transportation</li> </ul>

\* The availability of information varies between the communities and may not be available for all communities.

\*\* Social services are designed to address issues relating to children, youth, the elderly, women, families, substance abuse, crime, life skills, etc.

\*\*\* 2011 Aboriginal Population Profiles had not been released at the time of writing this report

**Table 3.2-3. Areas and Organizations Included in Primary Research**

Area	Organization
Economic Development	South Peace Economic Development Commission North Peace Economic Development Commission Chambers of Commerce [Dawson Creek] Municipalities [Tumbler Ridge, Dawson Creek, Chetwynd and Fort St. John]
Education and Training	Northern Lights College University of Northern British Columbia School District 59
Health	Northern Health Authority Tumbler Ridge Community Health Centre
Housing	Municipalities
Emergency Services	Royal Canadian Mounted Police Fire Departments
Planning and Resource Management	Municipalities

An interview guide was used to guide the interviews. The interviews were semi-structured so the guide was tailored to each socio-economic component and targeted the interviewee’s area of expertise. Written summary notes were prepared after each interview, and later transcribed in computer document file format. Sessions were also audio-recorded with the consent of the participant, and the recording was used to verify the written notes. Interview notes were later provided to the interviewees for their review and comment if they requested it in the interview.

### 3.2.3 Data Sources and Limitations

#### Quantitative

A variety of local, regional, provincial, and federal data were used to develop this report. These data generally relied on Stats Can census data from 2001, 2006 and 2011 (Statistics Canada 2002a, 2007, 2012) as a common source. For example, BC Stats employs Stats Can census data for analysis and projects, as do other provincial, municipal, and private sources of data.

With respect to small communities, in particular the Aboriginal communities in the LSA, much of the socio-economic data in this report have been aggregated by Stats Can for confidentiality purposes due to their size. The aggregation may mask differences between the communities. In these cases, it is difficult to cross-check data.

Out-dated data are also a limitation. Data from the 2011 census focused on a narrower range of topics. As such, 2011 socio-economic-related data are not available, particularly at the community level. As local and regional changes have likely occurred since the 2006 census data were compiled as a result of global and national economic forces, caution must be employed when drawing conclusions about the RSA and LSA communities' current characteristics and their future outlooks in particular.

Data inconsistencies also show up with respect to the regional subdivisions of the province, including areas defined by regional districts, local governments, health areas, economic development zones, and land management planning. These various administrative and legal boundaries rarely coincide with one another and have also changed over time.

The availability of specific indicator information varies from one community to the next and may not be available for all locations. Municipalities such as Fort St. John, Dawson Creek and Tumbler Ridge are local governments, and have relatively abundant information. Publicly available information on Aboriginal study communities, however, is frequently out of date, not centralized, and difficult to obtain. References and sources used to inform this study are provided at the end of this report.

#### Qualitative

To address data gaps and limitations, statistical data were supplemented with information gathered from interviews with service providers and government officials in the LSA. Wherever possible, information from interviews was cross-checked against secondary source information for validity and reliability. Efforts have been made to consolidate and verify data from a variety of sources, on a variety of scales, and with a variety of focuses. The main limitation associated with a semi-structured interview method is the potential for bias in the information provided due to the selection of interviewees, framing of questions, and the potential for limited or strategic answers. Where interviewees had a vested interest framing their communities either in a positive or negative light, information from these interviews should be read with caution.

As previously noted, there are limitations to statistical data, particularly in smaller communities; these data were complemented with qualitative data derived from community-based collaborative research involving key informants. Information on the MLIB, WMFN and SFN is limited to what was available and/or accessible at the time of writing due to the lack of participation in community interviews.

### 3.2.4 Assumptions

The following assumptions guided the baseline work:

- The Project will derive a portion of its workforce from the communities of Tumbler Ridge, Dawson Creek, Chetwynd and Fort St. John, as well as the Aboriginal communities of WMFN, SFN, and MLIB.
- Coal will be transported via rail from the Project site to the port at Prince Rupert for shipment overseas. Local highways, the Quintette Mine Road and the Murray River forest service road will be used year-round to mobilize personnel, equipment and supplies to the mine site.
- Materials required for Project construction and operation will be hauled to the site via Highway 52.
- Census and other statistical information, with consideration to relevant temporal constraints, accurately reflect the characteristics of each community's social context.

## 4. Results



## 4. Results

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### 4.1 PROVINCIAL OVERVIEW

The provincial overview focuses on information related to the provincial economy and labour force.

#### 4.1.1 Geography and Demographics

BC comprises 13% of the national population and is currently the third most populous province in Canada. The 2011 Census of Canada reported there were 4,400,057 people living in the province; a 7% increase from 2006 (Stats Can 2012l). Population growth over the last 20 years has been driven largely by immigration, particularly from Asia (Table 4.1-1; BC Stats 2010). Approximately five percent of the provincial population identified as Aboriginal when this data was last reported in 2006 (Stats Can 2007b).

**Table 4.1-1. British Columbia Population, 1996 - 2011**

Year	1996	2001	2006	2011	% Change (1996 - 2011)
British Columbia	3,724,500	3,907,738	4,113,487	4,400,057	+18.1%

Source: Stats Can (2002a, 2007b, 2012b)

Most of the provincial population is concentrated in Southwestern BC. Six-out of ten people live in the Mainland/Southwest Development Region<sup>1</sup>, another 17% live in the Vancouver Island/Coast Development Region, and 12% are located in the Thompson-Okanagan Development Region. The Northeast Development Region is one of the less-populated regions, with fewer than 2% of British Columbians residing there (BC Stats 2012e).

By 2036 the population of BC is expected to reach 6,155,600, an increase of about 33% from the population estimated for 2012. Between 2012 and 2036 the median age of the population is expected to increase from 41.4 to 45.4 years (BC Stats 2012f). The main factor driving population growth will be international immigration, which will account for 77.4% of the total population growth. Interprovincial migration will account for 17.3%, and natural increase (births minus deaths) will represent 5.3% of the population gains (BC Stats 2011b) .

BC offers a competitive transportation network and an integrated supply chain for Asia Pacific trade. The province's transportation system includes airports, seaports, railways, roads and border crossings, connecting Canada and North America to Asian markets. BC's Port Metro Vancouver and Prince Rupert Port are the closest ports of entry to Asia on the west coast of North America, approximately 58 hours closer than the competing ports of Los Angeles and Long Beach (BC MOTI n.d.-a). BC's coastal location has helped the province evolve in recent decades into an international hub for goods and people travelling to and from Asia and the Pacific (Schrier 2012). In addition, services continue to increase as demand from populations in urban centres continue to grow (Hallin 1998).

#### 4.1.2 Economic Sectors

BC's economy is responsible for 12% of Canada's gross domestic product (GDP), with the goods and services sectors each representing 24% and 76% of provincial GDP respectively (Table 4.1-2; BC Stats 2011b). In recent decades, employment and income contributions from these sectors have changed

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<sup>1</sup> Made up of the Greater Vancouver, Fraser Valley, Squamish-Lillooet and Sunshine Coast Regional Districts.

remarkably, reflecting both BC's growing population and its evolving role within Canada. BC's coastal location has helped the province evolve into a transit point for goods and people travelling to and from Asia and the Pacific. Service demand continues to increase as populations in southern BC grow.

**Table 4.1-2. Contribution of Resource Industries to the BC Economy, 2011**

Sector/Industry	2011 GDP by Industry *	Percent of Total GDP (2011)	Number of People Employed (2011)	Percent of Total Employment (2011)
Manufacturing	13,562	8.6%	163,900	7.2%
Construction	10,323	6.6%	204,600	8.9%
Mining and oil and gas extraction	4,873	3.1%	24,700	1.1%
Utilities	3,219	2.0%	12,800	0.6%
Forestry and logging	2,797	1.8%	14,000	0.6%
Agriculture (crop/animal production)	1,128	0.7%	23,100	1.1%
Fishing, hunting and trapping	105	n/a	n/a	0.1%
<b>Total (Goods Sector)</b>	<b>37,466</b>	<b>23.8%</b>	<b>447,400</b>	<b>19.7%</b>
<b>Total (Services Sector)</b>	<b>120,785</b>	<b>76.6%</b>	<b>1,827,200</b>	<b>80.3%</b>
<b>Total (All industries)</b>	<b>157,525</b>	<b>100%</b>	<b>2,274,700</b>	<b>100.0%</b>

Source: BC Stats (2012d, 2012a)

\*GDP expressed in millions of chained 2002 dollars

Note: Absolute data for individual categories used to calculate percentages and for the totals presented above have not been adjusted, and may contain irregularities derived from the original source. GDP sector percentages do not sum exactly to the goods sector total percentage because of the need to disregard several smaller data categories that were aggregated across industries.

In 2011, BC's employed workforce consisted of nearly 2.3 million workers, of which over 80% was employed in the services sector (BC Stats 2012d; Table 4.1-2). Wages in the goods sector are typically higher, however. In 2010, workers were more likely to be employed full-time (91.5%) as compared to the service sector, where only 76.7% of workers were employed full-time (BC Stats 2010).

Despite the growth of the service sector, resource-based industries continue to play an important role in the BC economy and provide an important source of employment, in particular in BC's northern communities. Today, forestry (30.5%) and energy products (30.7%) continue to be the province's main exports (BC Stats 2012e); however, there has been a considerable diversification of the export mix over the past five decades. For example, exports of coal, natural gas and other non-metallic minerals made up 27% of BC's total exports in 2009, whereas in 1959 they comprised only 4% of overall BC exports (Schrier 2010). The broadening of the provincial economy has, in part, been enabled by a more liberal continental trading environment under the North America Free Trade Agreement (or NAFTA- TIBC n.d.), as well as by growing Asian markets.

The rest of this section focuses on the analysis of the contribution of primary resource industries, in particular mining, to the provincial economy and labour market. This focus allows the discussion to remain relevant to the Project and its contribution to this sector.

#### 4.1.2.1 The Goods Sector

The goods sector comprises both primary industries (forestry, mining, fishing and agriculture) and secondary industries (construction, utilities and manufacturing). Within the goods sector, manufacturing was the main industry in terms of contribution to the provincial GDP, accounting for 8.6% of BC's GDP in 2011. It was followed by construction (6.6%), mining and oil and gas extraction

(3.1%) and utilities (2.0%). Forestry contributed to 1.8% of the province's GDP, while agriculture contributed 0.7% (Table 4.1-2).

Industries within the goods sector usually contribute to employment less than they do to GDP, with the exception of construction and agriculture, which are labour-intensive. In 2011, construction and manufacturing were the biggest employers within the goods sector, each representing 8.9% and 7.2% of provincial employment, respectively. Nearly half of the manufacturing jobs were in resource-related industries, such as wood, food, metal and paper (BC Stats 2012d). Primary resource industries (mining, forestry, and agriculture) directly employed relatively few people, accounting for only 2.3% of provincial employment. Some service industries, however, are linked to primary industries, providing transportation, wholesaling, retailing, insurance and other services to the goods sector (BC Stats 2010).

#### 4.1.2.2 *Mining and Oil and Gas*

The BC mining and oil and gas industries contribute to the overall Provincial economy, both directly and indirectly, through investment (in exploration and drilling, physical infrastructure, etc.), job creation, tax revenues and royalties (CERI 2011; PWC 2013). More indirectly, mining and oil and gas companies purchase goods from suppliers within the province who in turn purchase goods from other companies, Workers in the industry spend wages at local businesses that subsequently, spend those dollars on suppliers and other materials (MABC 2013).

Mining has been an important component of the provincial economy for over 150 years. In recent years, both northwestern and northeastern BC have experienced a significant boom in exploration and mining activities. Strong market demand—particularly from Asia—and surging mineral prices have attracted considerable investment in exploration, helping to position BC as a globally-important source of production (IPGDC and NDIT 2009). British Columbia is Canada's largest producer of copper, its only producer of molybdenum and its largest exporter of coal (MABC 2013). In recent years, BC's coal industry has generated billions of dollars in Provincial GDP annually and contributed hundreds of millions of dollars in tax revenue (Coal Association of Canada 2013).

Natural gas has within the last few years become a very lucrative industry in BC. Major discoveries of shale gas reserves, such as the Horn River Basin in northeast BC, combined with technological improvements in extraction methods that have made it more economical to extract shale gas, have made this sector an attractive one in which to invest. Industry investment in BC's natural gas sector has grown from \$1.8 billion in 2000 to \$7.1 billion in 2010, a nearly threefold increase (BC Stats 2011a; BC MEMNG 2012b).

#### Contribution to Gross Domestic Product

Oil and gas extraction was the biggest contributor to the provincial GDP, accounting for \$3.4 billion of GDP in 2011. Primary mining of metals and non-metals represented another \$1.1 billion in GDP, while supporting activities, such as drilling and exploration, accounted for \$683 million in GDP (BC Stats 2012a). In terms of revenue, oil and gas in BC totalled approximately \$5.3 billion in 2010, with natural gas accounting for almost 74% or \$4 billion (CAPP 2011).

In 2011, the value of BC mineral production (excluding oil and gas) was \$8.6 billion, 20% more than its 2010 value (\$7.1 billion) and 49% above its value in 2009 (\$5.7 billion). Coal was the main mineral extracted, representing 66% (\$5.7 billion) of the total value of BC solid mineral production, followed by copper, which accounted for 18% or \$1.5 billion (BC MEMPR 2012a). It is noted that while the metals sector exhibited a significant slowdown during 2009 and a subsequent rebound in 2010, coal production and exploration remained strong over 2009, experiencing only a slight decline (BC MEMPR 2011, 2012a).

### Global Market Demand

BC's mining industry is sensitive to global economic demand because of the large proportion of exports to production and the fact that mineral prices are set internationally. The industry suffers when global demand decreases, and mining exploration and activity accelerates when demand for minerals increases (BC Stats 2006b). Mineral exploration investments in BC soared over 14-fold from \$32 million to \$463 million between 2001 and 2011 (BC MEMNG 2012a), in large part due to increased demand and commodity prices (PricewaterhouseCoopers 2012). In 2009, however, exploration spending had decreased by more than 50% over the previous year due to the economic downturn. In 2010, mineral exploration spending rebounded to \$322 million, more than double its 2009 value (BC MOFML and MNRO 2011), with spending increasing again in 2011.

Market growth, particularly in Asia, has driven rising mineral prices worldwide. Coal made the most significant contribution to net provincial revenues in 2011, while copper net revenues decreased by over 4% and molybdenum revenues remained consistent. Gold continued to climb in 2009, 2010 and 2011 (PricewaterhouseCoopers 2009, 2011, 2012).

The global recession in 2008 affected the oil industry in the same fashion as other industries. Demand for oil products retracted, oil prices fell and new drilling activity in the Western Canada Sedimentary Basin (WCSB) dropped by close to 40% between 2008 and 2009. Conventional oil production declined further than expected as the reduced number of new wells failed to offset the decline from existing wells. 2010 was a restart year for the industry as new well licensing activity picked back up reaching the 5,000 well level equal to the activity three years prior in 2007 (CERI 2011).

Over the next 20 years, global demand for natural gas is expected to rise dramatically, fueled by rapid economic growth in Asia. In order to ship this commodity to customers outside of North America, the Province of BC has committed to having its first clean-energy powered Liquid Natural Gas (LNG) plant in operation by 2015 and three LNG facilities running by 2020 (BC Stats 2011a; BC MEMNG 2012b).

### Tax Revenue Benefits

Federal, provincial and municipal tax revenue from mining and oil and gas provides economic benefits that are felt outside the area of operations. Tax revenues are used by government to fund social, health, education, and other programs and services for residents nationally, provincially, and within local communities.

The mining industry contributed \$805 million in government payments in 2011, significantly more than the \$691 million in 2010 (PricewaterhouseCoopers 2012). The coal industry in particular was reported to have contributed \$715 million in tax revenue in 2011 (Coal Association of Canada 2013). Companies operating in BC also pay provincial and federal income taxes. Direct government revenues from mining include a mineral tax levied on mine operators under the *Mineral Tax Act* (1996c), a mineral land tax on freehold mineral rights holders under the *Mineral Land Tax Act* (1996b), and an annual mine health and safety inspection fee (BC Ministry of Finance 2012).

While mining contributions to government revenue have increased, royalties provided to the provincial government from the oil and gas industry have notably declined in recent years. The oil and gas industry contributed nearly \$466 million in royalties in 2010; this is 6.8% less than in 2009, and 76% less than a recent peak in 2005. The decline in oil and gas revenues is most likely the result of the recent global recession, when demand for oil and gas fell and prices dropped (CAPP 2011; CERI 2011).

### Exploration Spending

In 2011, mineral exploration expenditures in BC were \$463 million, approximately 44% more than that of 2010 and triple that of 2009 (during the economic downturn- BC MEMPR 2012b). In addition, approximately \$2.9 billion was spent in new mine development and existing project expansions, more than double the amount spent in 2010 (PWC 2012). A rebound from the global economic recession, as well as the strong market demand and rising mineral prices are the main drivers of increasing exploration activity (BC MEMPR 2011).

Exploration and development in the oil and gas industry plays an even stronger role in the BC economy. Oil and gas exploration and development expenditures reached \$7.07 billion in 2010. In addition, crown revenues from royalties, fees and land bonuses collected from sale of BC crown oil and gas rights totalled \$1.31 billion in 2010. This is notably less than in 2008 (prior to the economic downturn), when crown revenues totalled \$3.03 billion (CAPP 2011).

### Employment

Employment in BC's mining, oil and gas industries and supporting service sector hit a peak in 2008 of 25,400 workers (after 5 years of continued expansion), then declined slightly with the economic downturn. In 2010, the industry employed 22,700 individuals, 7% fewer than the 24,200 people employed in 2009. In 2011, however, industry employment once again increased to 24,700, placing it above 2009 employment levels (BC Stats 2012d).

Within the mining sector, the number of workers directly employed by mining companies has consistently increased in recent years. There were 10,419 people directly employed by mining companies in BC in 2012, up from 9,310 in 2011, and 7,688 in 2009. This amounts to a 32% increase in mining employees in the last four years (PWC 2013).

Of the total workforce employed in the mining industry, the vast majority is employed in primary mining (14,000 individuals). Oil and gas extraction employs 3,200 and another 7,500 are employed in supporting activities for both mining and oil and gas extraction (BC Stats 2012d). While oil and gas is the biggest contributor to the industry GDP (see earlier), its contribution to employment is relatively small. This discrepancy is explained by the technology used in the oil and gas industry, which requires high investment in capital equipment but employs relatively little labour (BC Stats 2010).

A significant proportion of mining and oil and gas industry jobs are in trades, transportation, and equipment operations (38%). Employment in occupations unique to the primary industry was also common, including drillers and miners (33%). Other areas of expertise include natural and applied sciences (12%), and business, finance and administration (10%). Eight out of 10 workers in the industry are male (BC Stats 2010).

The average salary in the industry is relatively high compared to other industries. In 2008 the average hourly wage rate in mining, oil and gas extraction was \$27.96, more than six dollars higher than the average \$21.46 wage in BC (BC Stats 2010).

The total salary and benefits garnered through employment in the mining industry was almost \$1.1 billion in 2011, a 22% increase over the previous year's total (\$886 million). In 2012, the average compensation per employee including salary and benefits was \$121,000, a 4.6% increase from 2011 (PWC 2012, 2013).

The Mining and Industry Human Resources Council (MiHR) states that while the employment potential of BC's mining sectors is strong, the future of the industry is threatened by labour and skills shortages

within the province and elsewhere in Canada. The mining workforce is aging, and retirements are expected to rise substantially over the next ten years. Fewer young people are expected to enter the labour market, and though immigration will partially address these shortcomings, it will not be sufficient to completely offset domestic labour shortages. Attracting and retaining underutilized or underrepresented groups such as Aboriginal peoples, immigrants, and women will also be required to help address future labour needs (MiHR 2012).

#### Coal Mining

Coal production tonnages, exploration expenditures, and tenure applications all reached record levels in BC in 2012. The estimated total coal output was over 30 million tonnes (the first time in the province's history), which accounted for about \$5.1 billion of the \$7.4 billion in production revenues from all mines in the province. Major markets for BC coal include Asian countries, notably Japan, China, South Korea and India, and countries in South America and Europe. New mine proposals are currently being evaluated, and several port facilities are planning to increase export capacity (BC MEMNG 2013).

Coal production currently represents over half of the total mineral production revenues in the province. Coal is BC's largest single export commodity. Preliminary estimates from 2010 shows that approximately 3,800 people were employed in coal mining in BC that year (BC MEMNG n.d.).

The most common type of coal exported from BC is metallurgical coal, which made up 97% of all coal shipped to international destinations in 2007. Shipments of metallurgical coal increased 10% from 22.3 million tonnes in 2010 to 24.5 million tonnes in 2011 (BC MEMNG 2013).

Coal exports from BC have experienced some volatility over the last two decades, with lean years in the mid-nineties and a sub-par year in 2002. Tightening of demand led to price increases in 2008 (Schrier 2008). After peaking in 2011, prices have decreased for all types of coal in 2012, ranging from \$114 per tonne for thermal coal to as much as \$180 for pulverized coal injection coal (BC MEMNG 2013).

#### *4.1.2.3 Forestry*

About two-thirds of BC land (60 million hectares) is covered by forest, of which approximately 95% is owned and managed by the provincial government (BC Stats 2010). BC produces more than 50% of Canada's softwood lumber and the industry contributes to more than 30% of the country's forestry GDP (BC MFLNRO 2011).

The industry has faced many challenges during the last years, including the downturn in the United States housing market, low prices for forest products, and a significant mountain pine beetle epidemic that attacked forests throughout much of south and central interior (BC Stats 2010). The forest industry's contribution to provincial GDP - including forestry and logging, wood product manufacturing and pulp and paper manufacturing - declined from \$9.8 billion (7%) in 2005 to \$6.4 billion (4%) in 2009, rebounding in 2011 to \$8.1 billion (BC Stats 2012a).

Forest products (wood products and pulp/paper products) are second only to energy products in their value as an export commodity in the province, representing 30.5% (\$9.9 billion) of all BC exports in 2011. Although forestry exports have recovered from \$7.6 billion (30.3% of total BC exports) in 2009, its relevance has notably declined from a high of 48.6% (\$15.1 billion) in 2004 (BC Stats 2012e). The forest industry is highly dependent on global markets and exchange rates. The main markets for BC forest products are the US, China, Hong Kong and Japan, with a growing Chinese market and a declining US market (BC MFLNRO 2011).

The total timber harvest volume showed a recovery in 2010, after having decreased since 2005. Approximately 62.8 million cubic metres of timber was scaled in BC during 2010. This is 28% above the 48.9 million cubic metres harvested in 2009 and 3% above the 61.1 million cubic metres scaled in 2008 (BC MFLNRO 2011).

#### Employment

The forestry and logging industry directly employed 14,000 people in 2011, a decrease of 13% from the 16,100 people employed the previous year. Employment remains well below its 2008 level of 17,300 and considerably below its 2007 level of 24,200. Provincially, the forestry and logging industry represents 0.6% of total employment in BC (BC Stats 2012d). Although its significance has declined over the past few decades, the industry remains the primary employer in many rural communities (BC MFLNRO 2010). Eighty percent of the workers in the industry are male (BC Stats 2010).

Wood product manufacturing and paper manufacturing are also significant employers throughout the province, directly employing 30,100 and 9,200 people, respectively, in 2011. These industries represent 1.3% and 0.4% of the provincial employment. Overall, the forest sector contributes to 2.3% of BC employment (BC Stats 2012d). If indirect and induced economic activity is included, the forest sector accounts for 7% of employment and 15% of all economic activity in the province.

In 2008, the average hourly wage rate in forestry and logging was \$25.22, which is \$3.76 more than the average \$21.46 wage in BC (BC Stats 2010).

#### *4.1.2.4 Agriculture*

The BC agriculture industry represents 0.7% of the provincial GDP, a proportion that has remained fairly constant since 1990 (BC Stats 2010, 2012a). Despite its small contribution to the GDP, agriculture is an important source of employment in some regions of the province. Agricultural activity is largely concentrated in southern BC, including the Okanagan, Fraser Valley and Kootenay areas (BC Stats 2010). The Okanagan primarily produces fruits and grapes, while the Peace River area is a major producer of grains. Large cattle ranches are mainly located in the Cariboo. Hog and poultry farming is concentrated in Vancouver and Victoria, while fish farming is mainly located along Vancouver Island (BC Stats 2010).

Farm cash receipts were estimated at \$1.19 billion in 2010, and livestock receipts in 2010 totalled \$1.23 billion, with the main contributors being dairy, poultry and floriculture/nursery products. Farm cash receipts have increased 2.1% since 2009, and are 6.9% more than the 2005 - 2009 5-year average. Livestock receipts were 2.3% less than in 2009, but 1.6% higher than the 2005 - 2009 5-year average (Ministry of Agriculture 2011).

#### Employment

Agriculture is a highly labour intensive industry. It directly employed 26,100 people in 2011, which represented 1.1% of total employment in BC (Table 4.1-2). Crop production employs 52.9% of the industry workforce, animal production another 36.0%, and the remainder (8.0%) is employed in support activities (BC Stats 2012d).

Salaries in agriculture are relatively low. In 2008, the average hourly wage was \$14.05, around \$7 below the average wage in BC (\$21.46). Employment in the industry is highly seasonal; it rises during spring (planting season), peaks in summer (harvesting season) and drops off drastically in fall and winter. One-third of the workers are employed on a temporary basis (BC Stats 2010).

## 4.2 REGIONAL STUDY AREA

This section provides an overview of some of the characteristics of the PRRD, including geography, demographics, and economic and industrial trends, with an emphasis on the mining, energy, oil and gas, forestry, agriculture and tourism sectors. This regional-level baseline data will inform the analysis of the Project's potential effects on the regional economy and labour force.

### 4.2.1 Geography and Demographics

The PRRD is located in Northeast BC, from east of the Rocky Mountains to the Alberta border. With an area of approximately 119,000 square kilometres (km<sup>2</sup>), the PRRD is the largest regional district in BC, and comprises 1.5% of the Province's population (BC Stats 2012e; PRRD n.d.). Fort St. John is the largest community within the region and it is an important government service, logistical and supply centre (FSJ 2012c).

The PRRD includes the North Peace (City of Fort St. John, District of Taylor, District of Hudson's Hope, and Electoral Areas 'B' and 'C') and the South Peace (District of Chetwynd, City of Dawson Creek, Village of Pouce Coupe, District of Tumbler Ridge, and Electoral Areas 'D' and 'E'- see Figure 3.1-1). Aboriginal communities are interspersed within the four electoral areas; there are seven Indian Reserves in total in the PRRD (PRRD n.d.).

The PRRD has experienced a modest population increase in recent years. In 2011, the total population was reported to be 60,082, representing growth of 3.1% since 2006. Since 1996 there has been a 6.4% increase in population (Table 4.2-1) though between 1996 and 2001, the region's population declined by 2.5% due to out-migration as a result of mine closures when coal prices declined. As prices have risen in recent years and de-commissioned mines have re-opened and new mines have opened, the region has seen an influx of new workers and their families.

**Table 4.2-1. Peace River Regional District- Population, 1996 - 2011**

	1996	2001	2006	2011	% Change (1996 - 2011)
Peace River (Regional District)	56,477	55,080	58,264	60,082	+6.4%

Source: Stats Can (2002b, 2007f, 2012a)

The PRRD has a relatively young population; in 2011, the median age of the PRRD was 34.3 years, 7.6 years younger than the provincial median. In contrast to the Province, the gender ratio for the PRRD is weighted slightly in favour of males (51%; Stats Can 2012a), likely reflecting the prevalence of male-dominated occupations in the area. Two percent of the region's population was identified as a visible minority, which is well below the provincial average of 24.8% (BC Stats 2012i). This trend potentially reflects the relatively isolated nature of the RSA, as well as the distance of the RSA from major urban centres, which makes it less attractive for new migrants to the province. However, as shown in Section 4.2.5, current regional labour force demand is attracting increasing amounts of new immigrants, which will likely contribute to a change in the RSA's demographic make-up in the future.

Population projections estimate that the PRRD will experience a net increase of nearly 33% over 2011 numbers in 25 years, surpassing 85,000 people by 2036. This increase will be based on a long-term net population inflow and a positive natural increase (BC Stats 2012g).



#### 4.2.1.1 Aboriginal Peoples

Aboriginal peoples have a physical, cultural, and historical presence throughout the RSA. The RSA is further typified by a high proportion of First Nations residents in comparison with the rest of the province. The RSA includes Indian Reserves for the WMFS, SFN, Halfway River First Nation, Doig River First Nation, Blueberry River First Nations, the Tsay Keh Dene and the Kwadacha Nation.

In 2006, 12% of the RSA's population (6,985 people) identified as Aboriginal, including people living on and off-reserve, compared with 4.8% provincially (Stats Can 2007a). The cumulative population of the three Indian reserves included in the LSA totalled 420 in 2006, which represented 6% of the Aboriginal population in the RSA (see section 4.3 for population details for the LSA's Aboriginal communities). According to the 2011 census, the cumulative population of these Indian Reserves rose to 492, an increase of 17% (Stats Can 2012j, 2012e, 2012h). This increase in population likely indicates that some Aboriginal people are able to return to their communities due to the local availability of jobs. The 2006 Census reported that nearly 47% (3,260) of the RSA's Aboriginal population identified as Métis, more than 16% higher than the provincial average (Stats Can 2007a). This data likely reflect the history of Métis people in the region. For further information on the First Nations and Métis people in the RSA, please refer to the *Murray River Coal Mine Project: Traditional Knowledge and Traditional Use Desk-Based Research Report* (Rescan 2012).

#### 4.2.2 Governance

The communities in the RSA include municipalities established by the BC *Local Government Act* (1996a) and Indian reserves established by the federal *Indian Act* (1985). Municipalities include Fort St. John, Dawson Creek, Chetwynd, and Tumbler Ridge. Indian reserves in the RSA include West Moberly Lake IR 168A (WMFN), East Moberly Lake IR 169 (SFN), and McLeod Lake IR 1 (MLIB). Unincorporated areas include Kelly Lake, Rose Prairie, Pink Mountain, and Tomslake. Unincorporated communities are governed under regional authorities (i.e., PRRD- see Table 4.2-2 and Plate 4.2-1).



Plate 4.2-1. Provincial Government Building, city of Dawson Creek.

**Table 4.2-2. Governance and Responsibilities**

Jurisdiction	Parties	Responsibilities
Federal	AANDC and Health Canada	Provide funding to First Nation reserve communities
Provincial	Government of BC	Government offices in Dawson Creek, Fort St. John, and Chetwynd. Ministries represented in Fort St. John include Forests, Lands and Natural Resource Operations; Children and Families; Justice; Jobs, Tourism and Skills Training; Social Development; Agriculture; Transportation and Infrastructure; Oil and Gas Commission; and Environment. Ministries represented in Dawson Creek include: Forests, Lands and Natural Resource Operations; Children and Families; Justice; Jobs, Tourism and Skills Training; Social Development; Agriculture; Transportation and Infrastructure; Oil and Gas Commission; and Environment. Ministries represented in Chetwynd include: Citizens Services; Justice; and Children and Families.
Regional	Peace River Regional District	Regional governance, including rural land use planning, and services. Includes communities of Kelly Lake, Rose Prairie, Pink Mountain, and Tomslake among others.
Municipal	Fort St. John, Dawson Creek, Chetwynd, Tumbler Ridge, Hudson's Hope, Pouce Coupe, Fort Nelson	Local governance and services
Indian reserves	West Moberly First Nations	Local governance (West Moberly IR 168A) Band governance and services
	Saulteau First Nations	Local governance (East Moberly IR 169) Band governance and services
	McLeod Lake Indian Band	Local Governance (McLeod Lake IR 1) Band governance and services

While the MLIB reserves are not within the PRRD, they are a signatory to Treaty 8, and the Project is within their traditional territory as outlined in their Statement of Intent to negotiate a comprehensive agreement with Canada and BC (MARR n.d. -a). Moreover, as their community is closer geographically to the Project than other First Nations within the PRRD, they are expected to experience effects from increased employment and other business opportunities accruing from the Project. As such, they are included as a study community.

#### 4.2.3 Education

Education levels in the PRRD are lower than the provincial average. Approximately 21% of the population aged 25 to 64 has not completed high school, compared to 11% for the province as a whole. Half of all residents in the region have no post-secondary credentials, nearly 13 percentage points higher than the provincial average. Approximately 41% of all 18-year-olds in the PRRD (in a two-year average from 2008/09 to 2010/11) did not graduate, the fifth highest of all regional districts, and more than 13 percentage points higher than the Provincial rate (BC Stats 2012i).

Aboriginal people in the RSA generally have lower education levels compared to Aboriginal people province wide. Of the regional Aboriginal population in 2006 aged 25 to 64, 38.5% did not possess a high school diploma, compared to 30.6% provincially. Only 35.5% had completed post-secondary education, whereas 45% of their provincial counterparts had this level of education. More of this age group, however, had a high school certificate or equivalent (26%) than their provincial counterparts (24.4%) (BC Stats 2006a).

There are several post-secondary institutions in the RSA, including Northern Lights College (NLC) with campuses or facilities in Dawson Creek, Fort St. John, Tumbler Ridge, Chetwynd, and Fort Nelson (NLC 2012). The University of Northern British Columbia (UNBC) also has a campus in Fort St. John. These institutions and their services, as well as primary and secondary school facilities, are discussed in more detail within the LSA community profiles (Section 4.3).

The PRRD and the Province have been working together with industry and local stakeholders to ensure that local youth can train for jobs in the resource sector in their own communities. This objective is achieved through the Northern Opportunities Program. Also, dual credit programs at NLC are making it possible for secondary school students in the Region's School Districts to begin post-secondary pursuits while still in high school, earning credit toward their high school diploma as well as a college degree or certificate (Northern Opportunities 2009; Anonymous 1, Pers. Comm., 2012; R. Dennis, Pers. Comm., 2012).

#### 4.2.4 Transportation

Figure 4.2-1 is a map of major highways, as well as airports/landing strips and rail infrastructure in the RSA. The following sections focus on that infrastructure which services the LSA communities and connects them with larger urban centres and coastal shipping facilities.

##### 4.2.4.1 Roads and Highways

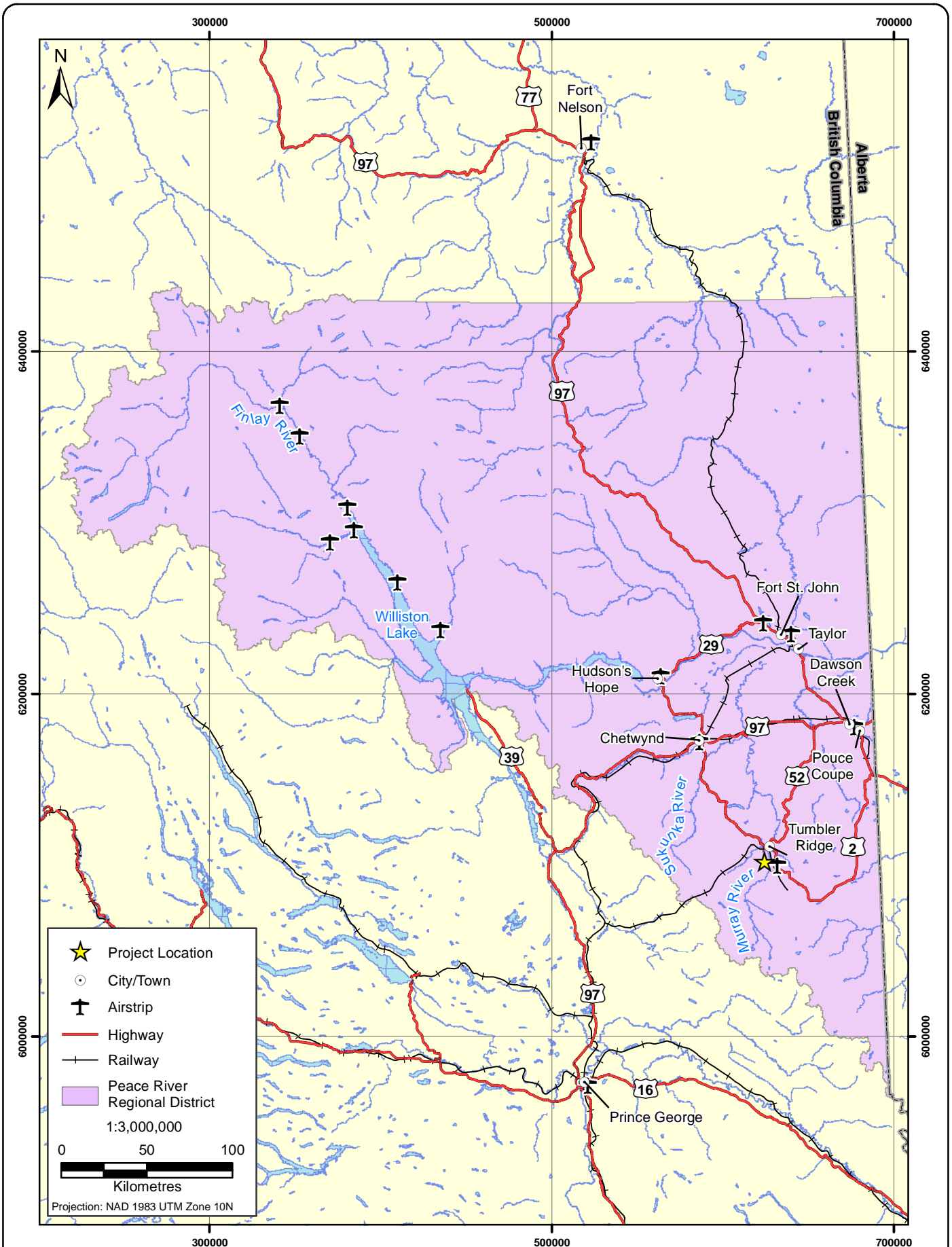
The RSA is serviced by three provincial highways: 97, 29 and 52. Highway 97 is further classified as 97N (which is part of the Alaska Highway) and 97S (known as the John Hart Highway, which connects to Prince George). Highway 52 is further classified as 52N (Heritage Highway) and 52E (Boundary Road). Tumbler Ridge is located at a meeting point of Highways 29, 52N and 52E.

According to the BC Ministry of Transportation and Infrastructure (BC MOTI) Service Plan for 2013/2014, \$20 million will be invested in the next two fiscal years in rehabilitating the existing public road infrastructure in the Northeast region of the province. This investment is intended to help eliminate seasonal road restrictions and extend the winter drilling season for oil and gas exploration, thereby attracting new investment, creating jobs and improving safety for both industry and residents (BC MOTI 2013).

BC MOTI is also working with local governments and stakeholders to identify priority areas for improving the performance of highway corridors through projects such as passing lanes, four-laning, left-turn slots, realignments and safety upgrades. Projects include widening Highway 2 and Highway 97 North near Dawson Creek and Fort St. John (BC MOTI 2013).

##### Highway 97N (Alaska Highway)

This northernmost section of Highway 97 (beginning at Mile '0' in Dawson Creek- see Plate 4.2-2) is 965 km long (600 mi), and travels north through largely unpopulated areas, intersecting the communities of Fort St. John and Fort Nelson, travelling north to the Northwest Territories. Here, the highway veers generally northwestward into areas spotted with small hamlets. As it passes over the Rocky Mountains, the highway parallels the Liard River before terminating just over the BC/Yukon border at Watson Lake, where the Alaska Highway is numbered as Yukon Highway 1 (British Columbia Highway News n.d.). Most of the two-lane highway is paved or chip sealed, and many of the rough areas are marked, though not all (Bell's Travel Guides 2012; OutWestNewspaper.com n.d.).



### Transportation Infrastructure in the Regional Study Area

Figure 4.2-1



**MURRAY RIVER COAL PROJECT**





*Plate 4.2-2. Mile '0', Alaska Highway, city of Dawson Creek.*

A study conducted on the Highway 97 corridor between Dawson Creek and Fort St. John determined that intersections along Highway 97 are operating at sufficient capacity for the current traffic levels. While the actual number of collisions along the stretch is low, in comparison to the amount of traffic on the highway, the collision rate is higher than the average for highways province-wide. The predominant collision type is wildlife collisions. The issue of most concern to stakeholders was the lack of passing opportunities along the highway. (Opus Hamilton 2008).

Recent upgrades to the highway include expansions to four lanes in crucial areas and heightening of bridges and overpasses to meet the minimum standard of 5.0 m (InvestBC n.d.-a).

#### Highway 97S (John Hart Highway)

This 405 km (252 mi) long stretch of Highway 97 begins at Prince George, travelling for 152 km (94 mi) north through the small hamlet of Summit Lake (which is situated at the Continental Divide) as well as through Crooked River Provincial Park, Bear Lake and McLeod Lake, to its intersection with Highway 39. It then journeys northeast another 150 km (93 mi) through the Continental Divide, at which point the time zone changes from Pacific Time to Mountain Time. After emerging from the Pine Pass, the highway intersects with Highway 29 at the town of Chetwynd. After a trek of another 97 km (60 mi) east, the Hart Highway terminates at Dawson Creek (British Columbia Highway News n.d.).

Highway 97S is paved the entire way from Prince George through to Dawson Creek. Most of the highway is two-lane, with intermittent three-lane sections for passing. Within the city of Prince George the highway widens to four lanes (S. Holahan, Pers. Comm., 2013).



#### Highway 29 (Don Phillips Way)

This highway starts at its junction with Highway 97 northwest of Charlie Lake and continues via Hudson's Hope to the junction with Highway 97 at Chetwynd, and from there southeast to Tumbler Ridge where it intersects with Highway 52 (BC MOTI n.d.-b). It passes by the community of Moberly Lake as well as the W.A.C. Bennett and Peace Canyon Dams (BC Adventure.Com 1995-2013). Highway 29 is a two-lane paved highway with passing lanes (L. Norman, Pers. Comm., 2013).

#### Highway 52N and E (Heritage Highway/Boundary Road)

This highway starts at its junction with Highway 97 at Arras (11 km west of Dawson Creek) south to its junction with Highway 29 in Tumbler Ridge (distance 98 km), and then loops back, traveling north and east (approximately 145 km) to Route 2 at the unincorporated settlement of Tupper (BC Adventure.Com 1995-2013; BC MOTI n.d.-b).

Highway 52N (Heritage Highway) is paved for all but one 20 km section of its length, the remainder being chip seal. The entire highway is two-lane with intermittent passing lanes (L. Norman, Pers. Comm., 2013). Highway 52E (Boundary Road) is an unpaved gravel road that is used mostly by locals (BC Adventure.Com 1995-2013).

#### *4.2.4.2 Air, Rail and Bus Transportation*

The largest airport in the PRRD is Fort St. John Regional Airport, located 7 km east of the community (YXJ n.d.). The airport has two runways (InvestBC n.d.-a) and 6 helicopter pads (FSJ n.d.). Carriers serving the airport include Air Canada Jazz, Central Mountain Air, and North Cariboo Air (the latter only by charter- YXJ n.d.). The airport serves a total of 56 non-stop flights per week (InvestBC n.d.-a) to various cities including major cities such as Vancouver, Calgary, and Edmonton (NPEDC 2012a). Seven helicopter companies are also based at the airport (FSJ n.d.).

The City of Dawson Creek's airport is served by two carriers: Central Mountain Air, which offers direct flights to Fort Nelson and Vancouver; and Swanberg Air, which offers connecting flights to Fort Nelson, Edmonton and Calgary and direct flights to Fort St. John and Grande Prairie. The airport is also served by Charter companies such as Borek Air, Alta Flights, Villers Air, and North Caribou Air, and is also used by various helicopter companies (Dawson Creek 2011b).

The District of Chetwynd owns and operates the Chetwynd Municipal Airport, centrally located within the town's boundaries. The airport is registered for day and night use; however, it is not able to be utilized by commercial airlines. It supports Air Ambulance, local businesses and industry and the local flying club (Chetwynd 2012c; SPEDC 2012g). There is also a small airport site located 11 km south of Tumbler Ridge, which is primarily used by chartered and private local flights. The airport has a 4,000 feet asphalt runway (DTR 2009, n.d.-a).

Canadian National Railway (CN Rail) provides cargo services to the local industry. CN Rail provides freight service to Fort Nelson and to the ports of Prince Rupert and Vancouver. It has also reinstated operations along its Grande Prairie Subdivision between Hythe, Alberta and Dawson Creek (Dawson Creek 2011b). The railway has cargo-bulk, container, liquid, and multi-commodities capability (InvestBC n.d.-a).

Greyhound provides bus service to Fort St. John, Dawson Creek, Chetwynd and other communities in the Peace Region (Greyhound 2011).

#### 4.2.5 Health and Social

The PRRD is served by the Northeast Health Service Delivery Area (HSDA) which is comprised within the larger Northern Health Authority (NHA). The NHA is an integrated health delivery agency, providing comprehensive services to 300,000 people over an area of 600,000 km<sup>2</sup> and 28 communities, along with a range of unincorporated settlements and Indian reserve communities. This represents 64% of the Province's land area, but only 6.2% of its population (BC Stats 2012i; Northern Health 2012a).

##### 4.2.5.1 Facilities and Services

The NHA employs more than 7,000 people in 84 facilities, consisting of over two dozen hospitals, 14 long-term care facilities, as well as public health units and offices providing specialized services. Their operating budget for 2010-2011 was \$650.2 million. In the 2008-2009 operating year, facilities across Northern Health provided 539 acute care bed spaces, and 146,677 overnight stays were recorded. Northern Health emergency departments received 271,648 visits, and 35,198 surgeries were performed. Care facilities across Northern Health provided 1,040 residential care bed spaces (Northern Health 2012a).

Detailed information on health facilities and services in the LSA is provided in Section 4.3.

##### 4.2.5.2 Health and Social Issues and Trends

Health and social statistics on the Northeast HSDA (which incorporates the Fort Nelson, Peace River North and Peace River South Local Health Areas [LHAs]) shows that the Potential Years of Life Lost (PYLL) due to natural causes (measured over a 6 year average from 2006 to 2010) was the highest of all HSDAs at 45.1 per 1,000 population, nearly 44% higher than the provincial average. PYLL due to accidental causes (13.1 per 1,000 population) was nearly 90% higher than the provincial average (6.9 per 1,000 population) over the same time period (BC Stats 2012i).

The notable trends in PYLL are in part due to the region's isolated condition relative to southern BC and labour-intensive heavy industry jobs, all of which may contribute to the increased risk to individual health and well-being (Northern Health 2005; 2011; B. McCracken-Morris, Pers. Comm., 2012). Tobacco use is the greatest cause of preventable illness in the North. The fatality rate among Northern British Columbians from motor vehicle crashes is double the provincial average.

Notable in the HSDA 53 is the prevalence of serious drug crime. Between 2008 and 2010, the rate of non-cannabis drug offences was 3.48 per 1,000 people, which is 79% higher than the Provincial average (1.94 per 1,000) and the highest rate of all HSDAs in the Province. This rate is indicative of the increased presence of organized crime in the region, which is attracted by the prevalence of high incomes earned by people working in heavy industry (BC Stats 2012i).

Much of the focus of the NHA in the Northeast is working with heavy industry to improve the health of workers, who are primarily male. Northern Health has estimated there were approximately 1,800 industrial camps (ranging in size from a handful of workers to over 1,000 people) in the north in 2012; 90% of these were in the Northeast HSDA 53. Northern Health is responsible for implementing and enforcing environmental and public health regulations as outlined in the Industrial Camps Health Regulation (BC Reg 427/83), Sewerage System Regulation (BC Reg 326/2004) and *Drinking Water Protection Act* (2001), as well as regulations associated with the *Public Health Act* (2008; Northern Health 2012c; B. McCracken-Morris, Pers. Comm., 2012).

An aging rural population, coupled with increased industrial activity and rapid population growth from an influx of new workers has placed increased demands on health services in the RSA (Northern Health

2012c). As such, it is becoming increasingly difficult for Northern Health staff to interact with the companies overseeing new and existing camps. The atmosphere of industrial camps, the nature of shift work, the potential dangerous nature of some heavy industry jobs, and the prevalence of drugs and alcohol and Sexually Transmitted Infections in some camps, were all identified as having negative consequences for workers, their families, and the communities in which they live.

#### 4.2.6 Economy and Employment

This section focuses on the current economic and employment conditions in the PRRD, as well as the efforts of community-driven organizations (such as Economic Development Commissions and Community Futures) to maintain employment targets. It also discusses community-organized revenue-sharing arrangements that solve problems associated with direct taxation of development projects in the region. The economic base and employment for each community is discussed in Section 4.3.

##### 4.2.6.1 Employment Sectors and Statistics

The RSA exhibits a large dependency on primary resource industries. The main economic activities are energy and oil and gas, mining, forestry, and agriculture. Tourism is also a growing area, with potential for further development in backcountry, cultural, and eco-tourism (SPEDC 2012h). These sectors are discussed in greater detail in subsequent sections.

Data from Stats Can for employment in the RSA specifically is unavailable after 2006. In 2012, the Institute of Chartered Accountants of British Columbia (ICABC 2012) reported on economic conditions in the Northeast Development Region (which includes the PRRD and the Northern Rockies Regional Municipality) (BC Stats 2010). A total of 39,700 people were employed in the Northeast Development Region, a 6.7% increase from 2011. The unemployment rate was 4.1%, a 0.8% drop from 2011 and the lowest among the province's Development Regions and well below the provincial average (6.7%). This decline was a result of small reductions in the size of the local labour force and the participation rate, in combination with job gains (ICABC 2012; BC Stats 2013).

Youth unemployment rates also shrank in the Northeast Development Region, declining from 8% in 2010 to 4.7% in 2011, its lowest level in four years. The region's youth unemployment rate was the lowest rate among the province's Development Regions. Job opportunities in resources and construction, together with 2011 job gains in trade and other services—industries that typically require little or no training—account for this low rate (ICABC 2012).

Goods-producing industries accounted for 28.5% of the Northeast Development Region's employment in 2011; this compares to 19.7% provincially (BC Stats 2012d). Construction was the main source (33%) of employment in the goods sector (9.1% of the total labour force), followed closely by mining and oil and gas extraction (32%). Manufacturing employed 23.6% of the labour force in the goods industry (BC Stats 2012b; Table 4.2-3).

**Table 4.2-3. Employment by Detailed Industry, 15 Years and Over, Annual (Employment in Thousands of Persons)- Northeast Development Region, 2011**

Northeast Development Region	2011 Employment
Goods-Producing Sector	10.6
Agriculture	-
Forestry, Fishing, Mining, Oil and Gas	4.0
Forestry and Logging with support activities	-
Fishing, Hunting and Trapping	-

(continued)



**Table 4.2-3. Employment by Detailed Industry, 15 Years and Over, Annual (Employment in Thousands of Persons)- Northeast Development Region, 2011 (completed)**

Northeast Development Region	2011 Employment
Mining and Oil and Gas Extraction	3.4
Utilities	-
Construction	3.5
Manufacturing	2.1
Service-Producing Sector	26.5
Trade	6.0
Wholesale Trade	1.5
Retail Trade	4.5
Transportation and Warehousing	3.1
Finance, Insurance, Real Estate and Leasing	1.8
Professional, Scientific and Technical Services	2.5
Educational Services	2.6
Health Care and Social Assistance	3.0
Information, Culture and Recreation	-
Accommodation and Food Services	1.8
Other Services	2.7
Public Administration	-
All Industries (NAICS 2007) (North American Industrial Classification System)	37.2

Source: BC Stats (2012b)

Note: figures of less than 1.5 (1,500 persons) suppressed by BC Stats

The service sector accounted for 71% of all labour in the Northeast Development Region. The biggest employer in the service sector was retail trade (17%), followed by transport and warehousing (11.6%), and health and social assistance (11.3%; Table 4.2-3).

Affluence in the Northeast Development Region is high relative to the rest of the Province; only 5.8% of persons were identified as “low income” in the region in 2005, compared to 13.1% in all of BC. The average family income of all economic families that year was \$88,049, 9.3% higher than the provincial average. Moreover, the income share of the poorest households was 22.6% of all income earned in the region, nearly two percentage points higher than the provincial average and the highest of all development regions in the province (BC Stats 2012i).

The 2008/2009 global economic downturn led to a slowing of economic activity within the RSA. Business incorporations and establishments decreased steadily between 2007 and 2009; however, they have since rebounded, and in 2011 there were 16.7% more incorporations than in 2009 (BC Stats 2012c).

Worker retention is an ongoing challenge for service providers in the RSA, who are currently competing with heavy industry for staff and are unable in most cases to provide wages comparable to that paid by the mining, oil and gas, and energy sectors (S. Kenny, Pers. Comm., 2012).

#### 4.2.6.2 *Economic Development*

The North Peace and South Peace are each serviced by an Economic Development Commission (NPEDC 2012b; SPEDC 2012f). In addition, the Community Futures Program (supported by Western Economic Diversification Canada) has an office in Dawson Creek which provides services to the entire northeast region (Peace-Liard- Community Futures 2012). Community Futures Peace-Liard assists local companies to procure business from heavy industry.

In 2012, employment opportunities with heavy industry in the PRRD were so numerous that the regional Economic Development Commissions made efforts to recruit skilled workers from other countries through the Provincial Nominee Program. They have even gone as far as working with the Province to eliminate the labour market review in the northeast in order to fast-track the recruitment of immigrant labour. There is a major shortage of all skill sets in all sectors in the Region; all of the Region's residents with relevant skills are already employed (S. Kenny, Pers. Comm., 2012; S. Lemmon, Pers. Comm., 2012).

Economic sustainability in the PRRD is currently not an issue for most regional residents. The diversity of industry in the region, and transferability of worker skill sets, allow for individuals to easily find new employment if they happen to lose their job (F. Banham, Pers. Comm., 2012).

#### 4.2.6.3 *Revenue-sharing and Taxation*

The FairShare Deal is an agreement between the municipalities in the RSA and the Provincial government to help municipalities meet demands placed on community infrastructure by heavy industry. This Memorandum of Understanding was signed in 2005 and provides funds to the PRRD as "grants-in-lieu", since PRRD municipalities cannot access what would ordinarily be their municipal industrial property taxes. The FairShare funds are divided among local governments within the PRRD through a formula determined by the regional district. Municipalities with projects exclusively within their borders, and have the benefit of direct taxation, make less through the Fair Share Deal. This agreement, which is in effect until 2020, includes renewal provisions. Funding provided through the FairShare Deal is indexed to changes in the rural industrial assessment base; however, it is presently generating \$40 million in revenue for the PRRD and its municipalities (Dawson Creek 2011c; J. Chute, Pers. Comm., 2012; D. Hunter, Pers. Comm., 2012).

#### 4.2.7 **Mineral Exploration and Mining**

The RSA is an active area for mining and mineral exploration. Most mining activity is coal-based and is primarily located in the South Peace area. Coal accounts for approximately \$2 billion of the PRRD's \$6.6 billion in GDP. As of 2012 there were four mines in operation in the RSA and six proposed projects in various stages of exploration or development (SPEDC 2012e). Capital expenditures are expected to increase in the area, as the operating mines are making significant investments to expand their capacity and make their operations more cost effective (PWC 2012). For the fiscal year 2011, coal production was estimated at 5.6 million tonnes, and was expected to increase (DeGrace 2011) .

The following section describes current and proposed mine sites in the PRRD, focusing on their current production and employment.

#### 4.2.7.1 *Operating Mines*

##### Willow Creek (Walter Energy)

Willow Creek mine is located 45 km west of Chetwynd. The mine is wholly owned by Walter Energy (formerly Western Coal Corp) and began production in 2004. It was shut down in 2007 and then reopened in June 2010. In 2011, the mine produced 0.9 million tonnes of combined primarily pulverised coal injection and hard coking coal. The current processing capacity of the facility is 0.9 million tonnes (Peace River Block Daily News 2005; DeGrace 2011; Walter Energy Inc. 2011c; Ledcor n.d.).

Willow Creek employed approximately 510 people in 2011 (including contract and temporary employees). Walter Energy (Western Coal Corp.) applied to expand its mine production to 3.7 million tonnes per year. They have also conducted an extensive drill program at their Willow Creek South and Willow Creek West properties (DeGrace 2011).

In April of 2013, Walter Energy announced it is closing the Willow Creek mine, due to the falling price of metallurgical coal (250 News 2013).

##### Brule Mine (Walter Energy)

Walter Energy (Western Coal Corp.)'s Brule open-pit coal mine is located 45 km south of Chetwynd. Production in 2011 totalled about 1.3 million tonnes, up slightly from 2010. The mine employed 416 people on site in 2011, including contract and temporary employees (DeGrace 2011; Walter Energy Inc. 2011a).

Walter Energy (Western Coal Corp.) is investing significant capital to upgrade haul tracks and other equipment to increase its capacity. Brule mine does not have facilities to process or load the coal onto rail cars, so all of its coal is transported to Willow Creek mine, which is on the CN rail line and has coal loading facilities. To reduce hauling distance by 40%, Walter Energy (Western Coal Corp.) has recently completed the 60-km Falling Creek Connector gravel haul route, which directly connects Brule mine to Willow Creek mine (DeGrace 2011; Walter Energy Inc. 2011a).

##### Wolverine-Perry Creek (Walter Energy)

Walter Energy also owns the Wolverine property, located 30 km west of Tumbler Ridge. The property includes coal processing and rail loadout facilities as well as the Perry Creek open pit coal mine. The Wolverine-Perry Creek mine produces metallurgical coal for the steel industry. In 2011 the mine produced about 1.8 million tonnes. It has a capacity of 3.0 million tonnes per year, which is expandable to 3.5 million tonnes. Including contract and temporary employees, the mine employed 477 people in 2011 (DeGrace 2011; Walter Energy Inc. 2011b).

Walter Energy also owns the EB and Hermann properties, which possess a total of 40 million tonnes of proven coal reserves. Both projects have approved EA certificates and are awaiting approvals for production, which could begin as early as 2013 (DeGrace 2011; Walter Energy Inc. 2011b).

##### Trend Mine (Anglo American)

Anglo American recently purchased Peace River Coal's Trend mine, located approximately 25 km south of Tumbler Ridge. Operation began in December 2005. The mine is permitted to produce a maximum of 1.5 million tonnes per year for about 10 years (Anglo American n.d.; Peace River Coal n.d.). Mine employment was estimated at 350 people in 2011 (DeGrace 2011).

Anglo American intends to integrate the Trend Mine and the Roman Coal project (see below), also operated by Peace River Coal Inc. The combined Trend and Roman operations are expected to employ approximately 450 people full-time (Anglo American n.d.).

#### 4.2.7.2 *Certified and Proposed Developments*

A total of 12 projects in the region were in the advanced stages of exploration and development in 2011. The advancement of the Roman Mountain project (Peace River Coal) was stalled in 2011 because of environmental concerns relating to the mountain caribou population; however, an Environmental Assessment Certificate was issued on December 14, 2012. Construction should commence in 2013, with production initiating in 2014 (Anglo American n.d.).

Work also paused on Western and Peace River Coal's Belcourt Saxon Coal Limited Partnership. Peace River Coal had also been evaluating and advancing the Horizon Project, about 10km west of the Trend Mine (DeGrace 2011).

Teck Coal is seeking to re-open the former Quintette mine. A feasibility study for re-opening the mine was completed in the third quarter of 2012. They submitted a *Mines Act* Permit Amendment in April of 2012 and are currently within the *Mines Act* (1996d) permitting review process. First coal production, if the permit is amended, is expected in the first half of 2014. By the fourth quarter of 2014, Quintette is expected to be producing at an annualized rate of 3 million tonnes (Teck 2013).

### 4.2.8 **Energy**

#### 4.2.8.1 *Oil and Gas*

The PRRD has large reserves of oil and natural gas and remains the hub for exploration activity and production in the province. The area sits on the Montney Basin, which holds reserves estimated between 77 and 176 trillion cubic feet of marketable gas (SPEDC 2012b). The primary areas of activity are around Fort St. John and Dawson Creek, which are part of the Fort St. John Geological Region (BC MEMPR 2009).

Recent industry activity has centered on unconventional reservoirs in the South Peace area (BC MEMPR 2009). There are around 99 oil and gas companies operating in the South Peace area alone with over 254 oil and gas wells approved in 2009 (SPEDC 2012b). The major operators in the Fort St. John Region are Canadian Natural Resources Limited and ConocoPhillips Canada Resources Corp. In 2007, Canadian Natural Resources Limited was also the second largest gas producer by sales volume in BC (BC MEMPR 2009).

Technological advances in drilling and completion as well as high commodity prices have stimulated the production of tight gas in the region in recent years (BC MEMPR 2010). The Provincial Government has also supported the oil and gas industry by implementing an incentive package that reduced royalty rates for wells drilled from September 2009 to June 2010, and provided a 15% royalty deduction for natural gas deep drilling (CA 2010). The BC Government has also implemented an Infrastructure Royalty Credit Program to promote investment in oil and gas roads and pipelines (BC MEMPR 2010).

#### Employment

Unlike mining, oil and gas production is not labour intensive, but equipment intensive. As such, most of the employment created by the industry is in exploration and drilling activities rather than in primary extraction (BC Stats 2010). The oil and gas industry has also created indirect opportunities for local businesses and the local labour force in activities such as road and facility construction, pipelines, safety and security services, environmental assessment services, and land reclamation (SPEDC 2012b).

The North Peace Economic Development Commission estimates that the oil and gas industry provides direct employment to around 12,000 people in the area. The industrial service sector in the region has also distinguished itself, with small and large pipeline, well site construction, trucking and seismic companies providing support to the industry (NPEDC 2012a).

#### 4.2.8.2 *Hydro and Wind Energy*

##### Operating or Certified Projects

There are two hydroelectric dams operating in the PRRD, the Peace Canyon Dam and the WAC Bennett Dam, the latter being the largest hydroelectric dam in BC. These facilities provide approximately 40% of the hydro-electrical power utilized by the province.

There are several wind and solar power projects in the PRRD, including AltaGas' Bear Mountain Wind Park, located southwest of Dawson Creek. Bear Mountain was completed in 2009 and was the first wind park operating in BC. In addition, the Plutonic Power Corporation and GE Energy's Dokie Wind Farm Project achieved commercial operations in February 2011. This wind farm now provides energy to BC Hydro under a 25-year Electricity Purchase Agreement. The project is located near Chetwynd and has become the largest wind farm in BC (SPEDC 2012d).

Finavera's Tumbler Ridge Wind Energy Project received an EA certificate from the BC government in 2012. This wind farm is located 8 km southwest of Tumbler Ridge and has potential to power up to 18,000 homes once in operation. (Finavera 2011c; Canada Newswire 2012a). At the end of April 2013, Finavera announced the sale of the Tumbler Ridge project and the Meikle wind energy project (see below) to Pattern Renewable Holdings Canada ULC, a subsidiary of Pattern Energy Group LP (Canada Newswire 2013).

Thunder Mountain Wind Park, located 18 Km southeast from Tumbler Ridge, was awarded an EA certificate in 2009. In February 2011, Brookfield Renewable Power Inc. acquired a controlling interest over the project from Aeolis Wind Power Corporation. The project is on hold until securing a long term power purchase agreement (Aeolis 2012).

##### Proposed Projects

The Site C Clean Energy Project is currently being reviewed under the federal and BC EA processes. The Project will provide an estimated 7,650 direct construction jobs (for approximately 10 years), and up to 35,000 direct and indirect jobs through all stages of the project (The CSE Group 2011).

Proposed wind energy projects in the EA process include:

- Finavera Wind Energy's Wildmare Wind Energy Project, located 5 km west of Chetwynd. The company anticipates project operations to begin in 2014 and supply power up to 25,000 homes (Finavera 2011d); and
- Finavera's Meikle Wind Project, located 20 km from Tumbler Ridge, is currently in the pre-Application stage. Finavera had planned to commence operating the Meikle project by 2014 (Finavera 2011b). The Meikle project, as stated earlier, was recently purchased by Pattern Energy (Canada Newswire 2013).

#### 4.2.9 Forestry

The PRRD encompasses the Peace Forest District. This contains two Timber Supply Areas (TSAs): the Fort St. John TSA, which covers 4.673 million hectares; and the Dawson Creek TSA, which covers 2.078 million hectares. The annual allowable cuts have remained stable for the past few years, after being increased in 2003 to 1.86 million cubic meters for Dawson Creek TSA and to 2.115 million cubic metres for Fort St. John TSA (BC Stats 2012g; NPEDC 2012a; SPEDC 2012c).

In addition to timber harvest, the PRRD has an active forest manufacturing industry. It is home to various large lumber and pulp and paper mills and remanufacturing facilities, where the majority of the harvested timber is processed (BC Stats 2012g; NPEDC 2012a).

The forest industry in the PRRD has been facing many challenges in recent years. It was negatively affected by the global economic downturn in 2008/2009. In early 2008, Chetwynd saw the closure of its Canfor sawmill. This was followed by the shutdown of the Tembec pulp mill in February 2009. Both operations re-opened in early 2010 due to strong demand in Asian markets (CA 2010). As a result, the past two years have seen a revival in the regional forest industry (ICABC 2012).

##### 4.2.9.1 Employment

More recent statistics on employment in the forest industry is unavailable, as it has been aggregated with fishing, mining and oil and gas (ICABC 2012). The 2006 census estimated a total of 845 people directly employed in forest and logging industry (including support activities). This was 15 people fewer than in 2001. The industry accounted for 2.4% of employment in the Northeast Development Region, compared to a provincial average of 1.3% (BC Stats 2012c).

Wood product manufacturing and paper manufacturing also employ people throughout the RSA. In 2006, wood product manufacturing directly employed 780 people (2.3% of RSA employment), while paper manufacturing employed 365 people (1.1% of RSA employment). Overall, the forest sector accounted for 5.8% of the RSA employment (BC Stats 2012c).

#### 4.2.10 Agriculture

The RSA is the most northerly agricultural area of Canada (NPEDC 2012a) encompassing over 1,600 farms and ranches (BC Stats 2012g). Cattle, sheep, bison, pigs and horse ranching as well as grain farming are the main local agricultural activities. Approximately 90% of the Province's grain and 95% of its canola is produced in the PRRD. A significant proportion (around 30%) of the Provincial honey production is centered in the region as well (NPEDC 2012a).

The 2011 Census of Agriculture reported 1,532 farms with a total area of 901,961 hectares<sup>2</sup>, approximately 31% of the total 2.9 million hectares of farming land in BC. The region also recorded 99,823 cattle and calves, 16% of the total livestock in BC (Stats Can 2012a). The local agricultural industry benefits from low land prices, low production costs and longer summer days (NPEDC 2012a).

Farm cash receipts in the area were estimated at \$144.3 million in 2011, 4.9% of the total farm cash receipts for the Province (Stats Can 2012a).

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<sup>2</sup> The total area of agricultural land in this case includes land in crops (including Christmas trees), summer fallow land, tame or seeded pasture, natural land for pasture, woodlands and wetlands, and other lands on farm properties.

#### 4.2.10.1 Employment

The PRRD has a high concentration of agriculture workers relative to the province. Data on employment in the agricultural sector, however, has been unavailable since 2007, when 2,700 people in the region were reported to be working in that industry, accounting for 7.3% of all employment in the Northeast Development Region (ICABC 2012).

#### 4.2.11 Tourism

Tourism is becoming increasingly important in the RSA, and it is a sector with significant growth potential both demographically and economically (Norton 2006). The Northeast accommodation market has been steadily increasing in recent years, and revenue growth has surpassed that of any other region in the Province. From 2007 to 2008, the greatest increase in room revenue in Northern BC occurred in the Northeast Development Region (12.6%) compared to just 4.5% for the Province as a whole. Room revenues in the Northeast Development Region have risen quickly over the last decade, surging by more than 130% between 2000 and 2009, an increase six times larger than the provincial average (Stroomer 2010; BC Stats n.d.). The Northeast Development Region generated nearly \$76 million in room revenue in 2009, 3.8% of the provincial total (Tourism BC 2010).

Tourists are drawn to the area because of its relatively remote location and wide-open spaces. Outdoor activities such as hiking, white-water rafting and fishing make the region an attractive location for travellers looking for a unique opportunity to “get away” (Stroomer 2010). The PRRD offers tourism opportunities that reflect the natural wilderness of the area as well as its cultural and economic activity. The tourism industry provides strong potential for business investment, job creation, economic growth and rural development in the RSA. Key tourist interests and activities include backcountry and eco-adventure tourism, and guide-outfitting, hunting and fishing. In recent years, development has also occurred in agriculture tourism; cultural and heritage tourism, and Aboriginal tourism, among others (NPEDC 2012a; SPEDC 2012h).

#### Employment

While employment data does not define “tourism” as an industry in its own right, the North American Industrial Classification System (NAICS) identifies “Information, Culture and Recreation” and “Accommodation and Food Services” which are closely linked to tourism. No data for the Northeast Development Region region is available for the former; however, Accommodation and Food Services employed 1,800 people in the region in 2011, a 5.2% decrease from 2010 and 35.7% lower than a recent peak in 2009 (BC Stats 2012b). This suggests that employment in this industry had not yet rebounded from the global economic downturn. Data for 2012, when it becomes available, may show increasing employment in this sector.

### 4.3 LOCAL STUDY AREA

This section describes the socio-economic profile and characteristics of the communities in the LSA, including specific qualitative and quantitative descriptions of a community’s location, governance, demographics, education, employment, economy, and services (e.g., health, social, recreation and emergency) and infrastructure (e.g., utilities, transportation and housing).

#### 4.3.1 District of Tumbler Ridge

The District of Tumbler Ridge is located close to the BC-Alberta border in northeast BC, approximately 190 km (driving distance) from Fort St. John. The town is accessible from Chetwynd via Highway 29, Dawson Creek via Highway 52N, and Grande Prairie, Alberta, via Highway 52E (Figure 3.1-1). Tumbler Ridge is Canada’s youngest municipality, constructed in 1982 to service the Northeast Coal

Project which involved the export of 100 million tonnes of metallurgical coal between 1982 and 1997 (BritishColumbia.com 1998-2013). Since then, the town has grown from a small grouping of camp trailers to a modern community. The town site is built on a plateau above the confluence of three major waterways: Murray River, Wolverine River, and Flatbed Creek (DTR 2009). The town was officially incorporated in 1981 (BC Stats 2012c).

Tumbler Ridge is the largest municipality in BC by area. As such, many of the RSA's operating and proposed mines, wind farms, and oil and gas exploration projects are within 20 km of the town's urban core within the municipal boundaries (P. Hascarl and B. Elliott, Pers. Comm., 2012). The Murray River Project as shown in Figure 4.3-1 is among those included in the district's boundaries.

The District of Tumbler Ridge is represented by a Mayor and six Councillors elected at-large every three years (Plate 4.3-1). The total operating budget for the District in 2011 was slightly over \$12.8 million (DTR 2009, 2012a).



*Plate 4.3-1. Town Hall, District of Tumbler Ridge.*

#### *4.3.1.1 Population and Demographics*

With the slowdown of mining in the area in the 1990s following the reduction in world coal prices, the District of Tumbler Ridge's population declined by 51% from 1996 to 2001 (see Table 4.3-1) as former mine employees and their families moved away from the community in search of other opportunities (Halseth and Sullivan 2002; Stats Can 2002i).



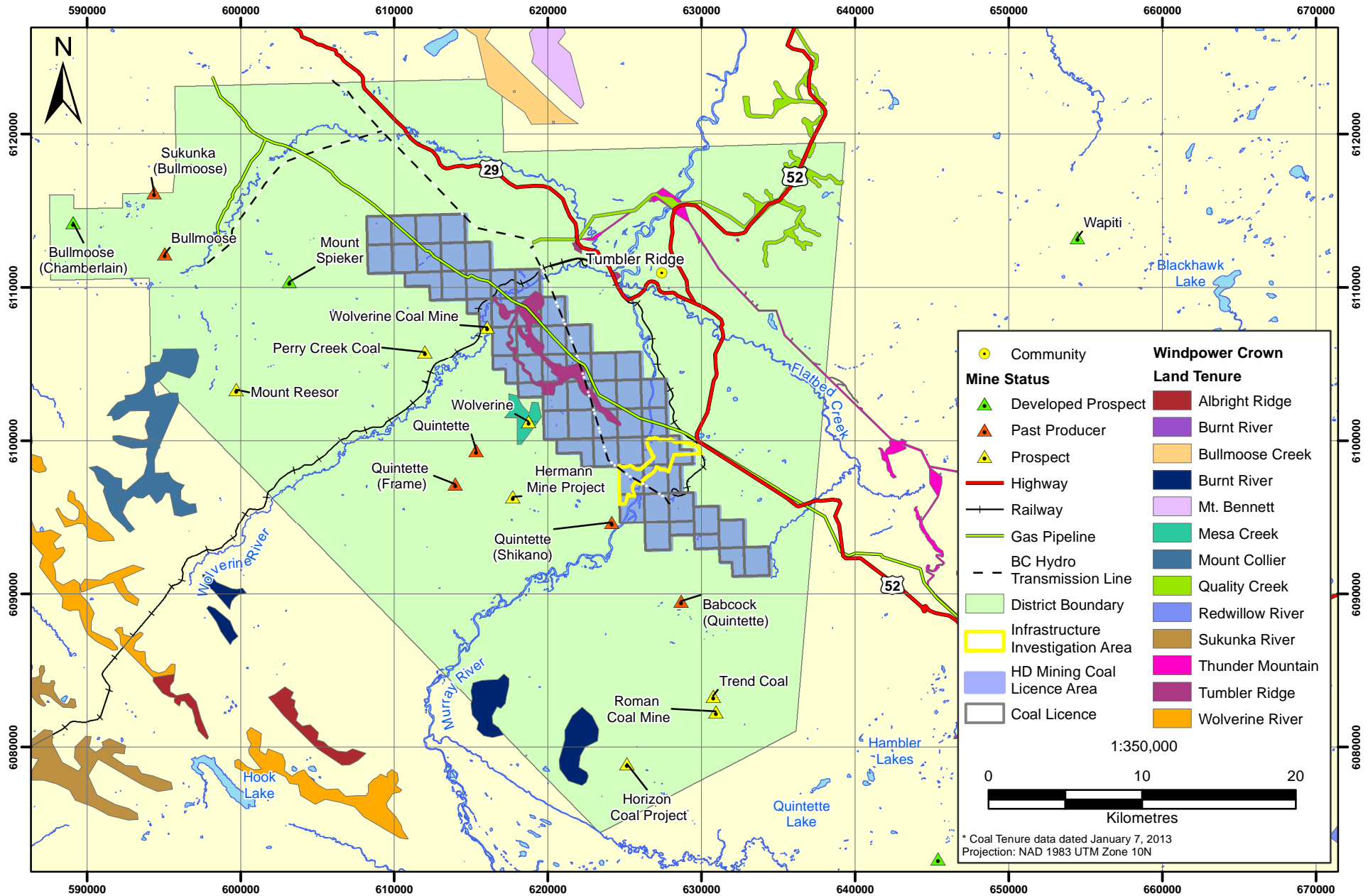


Figure 4.3-1



MURRAY RIVER COAL PROJECT

### Industrial Developments Within the District of Tumbler Ridge Boundary

Figure 4.3-1



**Table 4.3-1. Population and Demographic Changes, District of Tumbler Ridge 1996 to 2011**

Population and Demographics	1996	2001	2006	2011
Total Population	3,775	1,851	2,454	2,710
Population change from previous Census (%)	-18.8%	-51.0%	32.6%	10.4%
Males	2,045	960	1,300	1,465
Females	1,725	890	1,155	1,245
Median Age (yrs)	27.5	38.8	42.2	39.0
Population over 15 years (%)	71.1%	79.2%	82.2%	81.9%

Source: Stats Can (2002i, 2007i, 2012i)

In response to the dramatic population decline, the District of Tumbler Ridge commissioned an international marketing campaign, with a strategy to promote the area by focusing on its natural setting, lifestyle, and affordable housing. This attracted people from around the world, who took advantage of the low housing prices and relocated to Tumbler Ridge (DTR n.d.-b). Many new residents were retired, resulting in a rapid demographic shift, as the median age of the population increased from 27.5 years in 1996 to 38.8 years in 2001 (Stats Can 2002i).

The community saw the return of coal mining with the opening of the Wolverine-Perry Creek Mine in 2005, followed by the Trend Mine (DTR n.d.-b; see Section 4.2.7). Consequently, between 2001 and 2006, Tumbler Ridge's population increased 32.6%, from 1,851 to 2,454. Since 2006, the population has increased by 10.4% to 2,710 in 2011, though it remains notably smaller than its population during the 1990s (Table 4.3-1).

Today, Tumbler Ridge has slightly more males than females, with 54.1% of the population male in 2011. The median age for the community in 2011 was estimated at 39.0 years, slightly lower than the provincial median age of 41.9 years. Nearly 82% of the population of Tumbler Ridge is over the age of 15 (Stats Can 2012i, 2012a).

As there is no established Indian Reserve near Tumbler Ridge, the aboriginal population of the community is low relative to other communities in the RSA. According to the 2006 Census, only 9% of the community of Tumbler Ridge identified themselves as Aboriginal as compared to 12% regionally. The presence of visible minorities in Tumbler Ridge is even smaller, with 0.6% of all residents identified as a visible minority, all of whom were from the Philippines or Japan (Stats Can 2007i). More recently, the community has seen in-migration from China.

The "shadow population" of the District, transient workers who inhabit the various work camps around the community, have contributed to a situation in which the population of Tumbler Ridge is higher than that recorded in the Census, since Census data does not capture work camp populations. The transient population is not currently documented by the District either. As a result, certain services such as health and social programs are insufficient to meet the demand (P. Hascarl, Pers. Comm., 2012). The District, however, views itself as an inclusive community and is seeking ways to encourage as many of the immigrant/migrant workforce to become local.

#### 4.3.1.2 Education, Skills, and Training

The population of the District of Tumbler Ridge generally exhibits a lower rate of educational attainment compared to the province, though education in the trades, similar to other communities in the RSA, is higher. Of the population aged 15 and over in 2006, approximately 25% reported to have no certified education. More than one-fifth of the population, however, had trade certificates, twice as

many as compared to the provincial average (10.9%). The province, however, had proportionally more than three times the amount of people with university degrees (19.6%) than residents of Tumbler Ridge (5.5%; Table 4.3-2).

**Table 4.3-2. Maximum Level of Education Attainment as a Percent of Total Population, District of Tumbler Ridge 2006**

Highest Level of Schooling	District of Tumbler Ridge			British Columbia		
	Total	Male	Female	Total	Male	Female
Total population aged 15+	2,005	1,065	935	3,394,910	1,649,590	1,745,320
no high school certificate or diploma	25.9%	28.2%	24.1%	19.9%	20.3%	19.5%
high school or postsecondary certificate	24.2%	17.8%	31.0%	27.9%	26.5%	29.2%
trades certificate or diploma	21.9%	28.2%	15.0%	10.9%	14.6%	7.3%
college certificate or diploma	19.7%	19.2%	20.3%	16.7%	14.4%	18.8%
university certificate, below a bachelor	2.7%	1.4%	3.7%	5.4%	4.6%	6.2%
university certificate, diploma or degree	5.5%	4.7%	6.4%	19.3%	19.6%	19.0%

*Note: percentages may not sum to 100% due to rounding errors at the source.*

*Source: Stats Can (2007a)*

### Education Facilities

Public education services for elementary and secondary students are provided by School District 59 (Peace River South), which also maintains an outdoor education centre at Gwillim Lake (DTR n.d.-b). About 300 students are enrolled in this program every year (R. Dennis, Pers. Comm., 2012).

Preschool and childcare facilities are provided by the Tumbler Ridge Children's Centre Society, which is located in the Community Centre. Tumbler Ridge Elementary is a K-6 school, and had an enrolment of 197 students in 2011/12. Tumbler Ridge Secondary is a Grade 7-12 school with an enrolment of 196 students in 2011/12 (Dawson Creek 2011b; DTR n.d.-b).

NLC, with its head office in Dawson Creek, maintains a campus in Tumbler Ridge located in the Secondary School building. The college provides many academic, trades, continuing education, distance education, and on-line courses. Some of its special programs are in oil and gas and other natural resource-based industries (NLC 2012; DTR n.d.-b; Anonymous 1, Pers. Comm., 2012). The college is also active in training the workforce for the local mines (K. Bryan, Pers. Comm., 2012; Anonymous 1, Pers. Comm., 2012).

### 4.3.1.3 *Employment*

#### Employment/Participation Rates<sup>3</sup>

The labour force aged 15 and above totalled 2,000 people in 2006 (Table 4.3-3). This number has since grown to approximately 2,220 individuals in 2011 (Stats Can 2012i). The participation rate in the District of Tumbler Ridge decreased by 5.0% between 2001 (71.8%) and 2006 (66.8%), however remained slightly above the 2006 provincial rate of 65.6%. As in the province, men in the town reported slightly higher participation rates than women (Stats Can 2002i, 2007i).

<sup>3</sup> Employment data beyond the size of the labour force was not included in the latest Census, as such most of the remainder of the discussion relies on 2006 Census results.

**Table 4.3-3. Labour Force Data for the District of Tumbler Ridge and British Columbia, 2001 to 2006**

Labour Force	District of Tumbler Ridge, 2001			District of Tumbler Ridge, 2006			British Columbia, 2006		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
Total Population 15+	1,465	765	690	2,000	1,065	935	3,394,910	1,649,590	1,745,320
Participation Rate	71.8%	77.6%	65.0%	66.8%	70.4%	62.0%	65.6%	70.7%	60.7%
Employment Rate	64.6%	71.7%	55.9%	63.0%	68.5%	56.1%	61.6%	66.7%	56.9%
Unemployment Rate	10.0%	7.6%	12.9%	5.6%	3.3%	9.5%	6.0%	5.8 %	6.3%

Source: Stats Can (2002i, 2007i)

### Unemployment

Of the population participating in the labour market, a total of 75 people were unemployed in 2006 (Stats Can 2007i). This corresponds to a 5.6% unemployment rate, which was slightly lower than the 6% rate estimated for the province as a whole in 2006. Unemployment at Tumbler Ridge was almost twice as high in 2001 (Stats Can 2002i), when the region was in the midst of an economic downturn (Halseth and Sullivan 2002).

#### 4.3.1.4 Income and Earnings

The population over 15 years in the District of Tumbler Ridge reported median earnings of \$28,283 in 2005, which was 10% higher than provincial levels (\$25,722- see Table 4.3-4). Annual median earnings for men in the town were particularly high at \$51,507, while women earned a notably lower median of \$14,904 (Stats Can 2007i).

**Table 4.3-4. Earnings and Income Data for the District of Tumbler Ridge Population 15 Years and Over, 2005**

Earnings and Income	District of Tumbler Ridge, 2005			British Columbia, 2005		
	Total	Male	Female	Total	Male	Female
Annual median earnings	\$28,283	\$51,507	\$14,904	\$25,722	\$32,375	\$20,458
Annual full-time median earnings	\$56,877	\$64,003	\$26,953	\$42,230	\$48,070	\$36,739
Earnings as a % of total income	81.6	83.9	74.5	75.1	78.5	69.8
Government transfers as a % of total income	10.8	8.3	17.6	10.7	7.9	15.0
Other money as a % of total income	7.7	7.8	7.7	14.2	13.6	15.2

Source: Stats Can (2007i)

Full-time earnings were significantly higher, with the median in the District estimated at \$56,877, which was 35% higher than the provincial level (\$42,230). Men earned on an average 33% more than their provincial counterparts (reflecting the high wages in mining and oil and gas), while women earned less than their provincial counterparts (Stats Can 2007i).

On average, earnings comprised nearly 82% of total income, while government transfers accounted for an additional 11% (Table 4.3-4). In total, earnings constituted a larger portion of income in Tumbler Ridge than provincially (75%).

#### 4.3.1.5 Economy and Business Environment

##### Overview

The importance of mining in the community of Tumbler Ridge is significant. The community began as a place to accommodate mine workers; it saw a dramatic out-migration when mining operations slowed down and then ceased by 2003; and an influx of new families with the return of coal mining to the area in 2005. Most newcomers to the town are working in the mines. Tumbler Ridge is the central service hub for the mines currently active in the area (K. Bryan, Pers. Comm., 2012).

Diversification, however, is an important issue, with business attraction and retention being a major focus for the District. Tourism is an emerging sector, particularly in the outdoor recreation sector. The recent paleontological discoveries around Tumbler Ridge have also led to an emerging “dinosaur tourism” industry, and the Peace River Paleontological Research Centre is quickly becoming well-known (K. Bryan, Pers. Comm., 2012).

The District is actively engaged through the South Peace Economic Development Commission to increase their profile at a provincial, national and international scale. They also participate in the Industry Interagency Round Table, which has quarterly information sharing meetings. It is composed of representatives from the mining industry, as well as local stakeholders in Tumbler Ridge, to discuss the status of projects and challenges faced by any parties (K. Bryan, Pers. Comm., 2012). As of 2012, there was no Chamber of Commerce in Tumbler Ridge; however, the District was making efforts to resurrect it (B. Elliott, Pers. Comm., 2012).

##### Labour Force Statistics

The key industries in the District of Tumbler Ridge by labour force include resource-based industries (31.8%), business services (14.6%), and construction (13.9%; Table 4.3-5). Other small services<sup>4</sup> comprised 16.1% of the total labour force. The male population was predominantly involved in resource-based industries, construction and business services. The female population was mostly employed in retail trade, resource-based industries and education services. The labour force in finance and real estate, as well as in health care and social services, was entirely female (Stats Can 2007i).

**Table 4.3-5. Industry Significance by Labour Force, District of Tumbler Ridge 2006**

Industry	District of Tumbler Ridge				BC Total % Distribution
	Total	Male	Female	Total % Distribution	
Total experienced labour force over 15	1,335	750	585	100%	100%
Agriculture and other resource-based industries	425	350	75	31.8%	4.9%
Construction	185	155	30	13.9%	7.6%
Manufacturing	30	25	10	2.2%	8.6%
Wholesale trade	35	30	10	2.6%	4.2%
Retail trade	100	10	85	7.5%	11.4%
Finance and real estate	30	0	30	2.2%	6.2%

(continued)

<sup>4</sup> “Other services”, to paraphrase the NAICS definition comprises establishments, not classified to any other sector, primarily engaged in repairing, or performing general or routine maintenance; providing personal care services and other services to individuals; organizing and promoting religious activities; supporting various causes through grant-making; advocating (promoting) various social and political causes; and promoting and defending the interests of their members. Private households are also included.

**Table 4.3-5. Industry Significance by Labour Force, District of Tumbler Ridge 2006 (completed)**

Industry	District of Tumbler Ridge				BC Total % Distribution
	Total	Male	Female	Total % Distribution	
Health care and social services	45	0	45	3.4%	9.7%
Educational services	70	10	60	5.2%	7.0%
Business services	195	135	60	14.6%	19.9%
Other services	215	35	180	16.1%	20.6%

Source: Stats Can (2007i).

The majority of the working population is employed in occupations related to trades, transport, and equipment operation (35.6%); followed by sales and service (21%), and business, finance, and administration (11.2%). Men tended to be employed in trades, transport, and equipment operation; and primary industry; while women were primarily employed in sales and service; and business, finance and administration. The labour force in business, finance and administration, health occupations, and art, culture, recreation and sport was entirely female (Table 4.3-6).

**Table 4.3-6. Experienced Labour Force by Occupation, District of Tumbler Ridge 2006**

Occupation	District of Tumbler Ridge				BC Total % Distribution
	Total	Male	Female	Total % Distribution	
Total experienced labour force over 15	1,335	750	585	100%	100%
Management	85	40	40	6.4%	10.5%
Business, finance, administration.	150	0	145	11.2%	17.1%
Natural sciences	75	65	15	5.6%	6.3%
Health occupations	20	0	20	1.5%	5.5%
Social science/education/government/religion	80	25	55	6.0%	8.1%
Art, culture, recreation, sport	15	0	15	1.1%	3.5%
Sales and service	280	65	220	21.0%	25.3%
Trades, transport, and equipment operators	475	430	50	35.6%	15.5%
Primary industry	115	105	10	8.6%	3.9%
Processing, manufacturing and utilities	30	20	15	2.2%	4.2%

Source: Stats Can (2007i).

### Businesses and Industry

The District of Tumbler Ridge hosts a variety of businesses and services (Plate 4.3-2), such as accommodation, building suppliers and services, industrial services, grocery and retail services, insurance services, employment services, financial services, outdoor recreational services, restaurant and food services, transportation and shipping services and many others. However, the town's residents have noted that the community is lacking in certain amenities such as a bakery/butcher/deli store, specialized legal, technical and management services, personal services, clothing stores, diverse restaurants, and indoor entertainment facilities (DTR 2010). A complete list of businesses and services is provided on the town's website (DTR n.d.-b).



Plate 4.3-2. Business Centre, District of Tumbler Ridge.

The District of Tumbler Ridge has developed an 11.7 hectare heavy industrial park, located 11 km south of the Tumbler Ridge town centre. All lots were placed on the market in 2006 and are serviced with underground water, sewer, gas and overhead power. The park is oriented towards heavy industrial users (DTR 2009).

#### 4.3.1.6 Social and Health

The District of Tumbler Ridge is within the NHA, Northeast HSDA (Northeast), and Peace River South LHA 59 (BC Stats 2012h). The District of Tumbler Ridge's population accounted for approximately 9.5% of the LHA 59's region in 2006 (BC Stats 2012i).

The Tumbler Ridge Community Health Centre offers comprehensive health care service to the community residents. All health related services, such as doctor, nurse, counsellor, as well as ambulance, emergency services, lab, and x-ray are available in the same facility (DTR 2009). As of 2012, the community was serviced by two family doctors, 3 nurses, one mental health counsellor, a visiting optometrist, a part-time dentist, and a visiting respiratory therapist. Teleconference and remote consultation developments and technologies allow patients to receive services from specialists in larger centres without necessarily having to travel out of the community (Anonymous 2, Pers. Comm., 2012).

It is not a hospital, however, and patients do not stay overnight; rather they are transferred to a larger hospital within the PRRD if they require more extensive care. Pregnant women generally leave Tumbler Ridge two weeks before their due date to deliver their babies in a larger community; however the Tumbler Ridge Health Centre has delivered babies in the past (Anonymous 2, Pers. Comm., 2012).

The Tumbler Ridge Mental Health and Addictions program (which runs out of the community health centre) offers counselling for individuals, couples or families affected by drug or alcohol misuse. They also offer clinical services (assessment, treatment) for addicts. Youth and Family Services provides counselling to youths, couples, families and groups who need assistance. Safe home services are also available to provide emergency shelter for women and children (Northern Health 2012b).

The Health Centre's hours of operation are Monday to Friday from 8:30 am to 5:00 pm. Emergency care is provided 24 hours a day with a fully equipped Ambulance Service. Emergency care and ambulance operate on the 9-1-1 system, which is administered by the PRRD (PRRD n.d.). If necessary, Medevac air service and Shock Trauma Air Rescue Service (STARS) air ambulance (the latter operating out of Grande Prairie, Alberta) may be utilized.

The District of Tumbler Ridge has recently built a senior's complex, located behind the Royal Canadian Mounted Police (RCMP) detachment. TR Cares provides services such as a medical shuttle, and they provide some home care as well. They also run the women's shelter (K. Render, Pers. Comm., 2012).

The community also provides a range of recreational facilities, such as the community centre, golf course, tennis court, basketball court, soccer field, baseball diamond, playgrounds, and skate park. There are also campground facilities, an RV Park and Visitor Centre available to the residents and visitors (DTR 2009).

### Health and Social Issues

Prior to the resurgence of the mining industry in the area, medical services were primarily being used by the retired population of Tumbler Ridge. However, with the influx of mine workers and their families in recent years, there are more incidences of sick kids, pregnancy care and childbirth. Accidents caused by drug and alcohol consumption have also risen due to the high incomes earned at the mines. The "shadow population" of Tumbler Ridge is also putting a strain on health care provision in the town (Anonymous 2, Pers. Comm., 2012). Transient workers who are not residents of the town are brought to the Health Centre if there is an accident on one of the work sites around the community. With the population projected to increase in the future due to the economic boom in the area, it is unlikely that the size and staff of the existing facility will be sufficient to handle the workload as they are currently over-capacity (Anonymous 2, Pers. Comm., 2012). Recruitment of health professionals has historically been difficult due to the remoteness of the town's location (B. Elliott, Pers. Comm., 2012).

The lack of daycare spaces within the community is an issue which District Council is trying to rectify (B. Elliott, Pers. Comm., 2012). The District Council also has been making efforts to maintain the senior's population in the town, and restoring some of the health services that they have lost over the years for their more elderly residents. Dialogue with Northern Health is ongoing (B. Elliott, Pers. Comm., 2012).

Drug and alcohol are the main factors that drive crime in Tumbler Ridge, leading to calls related to mischief, impaired driving, minor assaults, and domestic violence. Organized crime has established a presence in the community, most likely as a result of the high incomes earned by workers at the local mines; this presence, however, is being monitored and addressed by the RCMP (K. Render, Pers. Comm., 2012).

#### *4.3.1.7 Infrastructure*

The District of Tumbler Ridge's Official Community Plan (OCP) is a municipal Bylaw (No. 584, 2012), which defines principles, objectives and policies for land use and development. Land use is designated into 14 zones, from general residential to recreation use (DTR 2012b).

The OCP delineates zones within the District known as "Open Space and Rural Resource" Areas (DTR 2012b). The proposed Murray River Project falls within this zoning designation. It is the policy of the District Council to direct resource-based uses such as mining, forestry, wind power, agriculture and



oil and gas activities, as well as recreation and conservation uses to those areas designated “Open Space and Rural Resource” on Schedules B, C and D of the OCP. (DTR 2012b).

Currently the town has excellent services and all necessary infrastructures to support its residents. The town of Tumbler Ridge was originally constructed to service a population of 10,000 people. In its heyday, the population of the District peaked at 5,000 people. With the population (as of 2012) hovering around 3,000, the town’s infrastructure can handle a significant increase in capacity. It is, however, starting to age, and replacement of sewer lines and electrical cables, for example, are projected in the near future (P. Hascarl and B. Elliott, Pers. Comm., 2012).

### Housing

The 2011 Census found the District of Tumbler Ridge accounted for 1,510 of BC’s 1,945,365 private dwellings. Out of these, 1,158 dwellings (76.7%) were occupied by usual residents (Stats Can 2012i). Nearly 71% of the dwellings in Tumbler Ridge were single-detached structures, 15% were apartments (less than five storeys high) and 11% were identified as “movable dwellings” (i.e., motor homes). There were an average of 2.3 persons per household in Tumbler Ridge in 2011, which was lower than the Provincial median (2.5).

As of 2012, there was little to no vacancy in Tumbler Ridge, either in single detached houses or in rental suites. Currently the District of Tumbler Ridge is focussed on accommodating the overflow, however there have been instances of immigrants to the town “going door-to-door” asking to buy or rent accommodations from the existing residents. Home prices, as a result, have significantly increased, with houses selling for ten times the amount they sold ten years earlier. Price gouging in rental rates is rapidly becoming a concern (P. Hascarl, Pers. Comm., 2012).

The District, however, is committed to building a more sustainable town, and moving away from permitting large temporary camps to be built. They are currently in the process of appraising land that is available to them within their district boundary, and then selling them to developers to construct more housing. However, due to the boom-and-bust cycles experienced by Tumbler Ridge, financial institutions have been reluctant to provide loan support to developers. (P. Hascarl and B. Elliott, Pers. Comm., 2012).

Commuting from neighbouring communities (such as Chetwynd or Dawson Creek) to projects in the Tumbler Ridge area is common. Part of the reason for this, apart from the lack of housing in the District, is the high cost of building a house there. As there are no local suppliers of lumber or sawmills in Tumbler Ridge, all lumber has to be shipped in from other communities. Despite the distance being traveled daily, it is not considered especially burdensome to workers, since local highways are viewed to be under capacity (G. Smith, Pers. Comm., 2012; F. Banham, Pers. Comm., 2012).

#### 4.3.1.8 *Utilities*

### Water

Two aquifers serve as the source of domestic water for the municipality. The water is stored in a seven million litre reservoir, which is adequate to supply all developed municipality areas, serving both domestic consumption and fire protection needs. A water treatment plant treats all water for residential and commercial use (DTR 2009).

### Sewage and Garbage

A modern sanitary sewer system is serving the municipality of Tumbler Ridge. For this purpose sewer treatment facilities and sewage lagoons have been constructed, at the north end of the municipality. There is an annual charge for sanitary sewer and water services to both residential and commercial users. The industrial park is also serviced by treated water and sewer system and it has its own lagoon facility (DTR 2009).

Garbage collection for residential, commercial and industrial users is provided by the municipality on a regular schedule (PRRD n.d.).

### Heating and Electricity

BC Hydro provides the District of Tumbler Ridge residents and businesses with electricity, while Pacific Northern Gas provides natural gas heating to residential, commercial, and industrial customers (DTR 2009).

#### *4.3.1.9 Communications*

Telephone service in the District of Tumbler Ridge is provided by Telus, while cellular service is provided by Telus Mobility and Bell Mobility. Internet services are supplied by Telus, Persona Communications, and Peace Region Internet Society (DTR 2009). The District of Tumbler Ridge receives four FM radio stations and three weekly community and regional newspapers. Persona Communications provides full cable service, while Bell Express Vu and Starchoice provide satellite television access to the community (DTR 2009).

#### *4.3.1.10 Transportation*

Air and road transport to and from Tumbler Ridge is discussed in Section 4.2.4.

#### *4.3.1.11 Emergency and Protection Services*

Tumbler Ridge has a permanent RCMP detachment housed in the Town Centre (Plate 4.3-3). The detachment has an office and detainment facility, and it is partially funded through the town's residential property taxes (DTR 2009). The Detachment Commander in Tumbler Ridge oversees administration and operations of the detachment, which includes a staff of four constables, a victim services worker, part-time guards for the cell block, 1 detachment clerk, and 3 volunteers (K. Render, Pers. Comm., 2012). The community has a 9-1-1 emergency contact number for police and fire services (DTR n.d.-b).

With the increase in industrial activity in the Tumbler Ridge area, the RCMP in Tumbler Ridge foresees a need for increased resources in the form of staff and funding. They participate in inter-agency meetings with the District of Tumbler Ridge in order to understand the projections (numbers, timelines) of incoming labour, and how this would impact police work (K. Render, Pers. Comm., 2012).

Tumbler Ridge has a 16 member, volunteer Fire Department with two full time members, including the Fire Chief. The fire department works in cooperation with Search and Rescue, and it is well equipped with emergency and fire protection vehicles (M. Treit, Pers. Comm., 2012; DTR 2009, n.d.-b). The volunteer search and rescue group provides emergency assistance as well as medical services at local events (DTR n.d.-b).

The volunteer Fire Department at Tumbler Ridge is responsible for fire suppression within municipal boundaries, and responds to motor vehicle accidents halfway to Dawson Creek or Chetwynd. Forest fires outside the town proper are suppressed in collaboration with the BC Forest Service.



*Plate 4.3-3. Royal Canadian Mounted Police detachment office, District of Tumbler Ridge.*

#### **4.3.2 City of Dawson Creek**

The City of Dawson Creek is located in northeast BC, approximately 1,184 km from Vancouver, near the BC-Alberta border (Figure 3.1-1). The city is located at the junction of four major highways: Hwy #97 North (Alaska Highway) to Yukon and Alaska; Hwy #97 South (Hart Highway) to Prince George and Vancouver; Highway #2 South to Grande Prairie and Edmonton; and Hwy #49 East to the Northern Alberta Peace area. Dawson Creek was incorporated as a Village in 1936 and as a City in 1958 (Dawson Creek 2011a).

In response to Japan's attack on Pearl Harbour in 1941, the American and Canadian governments decided to build a secure land transportation link from Dawson Creek, BC to Fairbanks, Alaska. The purpose of the road was to facilitate the transfer of goods, materials, and men from the continental states to Alaska. With the arrival of American troops and engineers, as well as American and Canadian civilians, Dawson Creek's population swelled to over 10,000 in a matter of weeks. After nine months of intense road construction, the 1,523 mile Alaska Highway was opened on November 20, 1942 - with Mile '0' located in Dawson Creek (Dawson Creek 2012b).

The City of Dawson Creek is represented by a Mayor and six Councillors elected at-large every three years. The total operating budget for the City in 2011 was slightly over \$35.3 million (Dawson Creek 2012a).

##### **4.3.2.1 Population and Demographics**

According to the 2011 Census, the population of Dawson Creek totalled 11,583, having increased 5.4% from 10,994 people in 2006. Fifty-one percent of all reported residents were female, which is reflective of the province's statistics. The median age for the community was estimated at 36.2 years, which was 5.7 years younger than the provincial median. Approximately 81% of the population of Dawson Creek is over the age of 15 (Stats Can 2012d).

The Aboriginal population of the community is high relative to other communities in the RSA. According to the 2006 Census, 13.4% of residents of Dawson Creek identified themselves as Aboriginal as compared to 12% regionally. The presence of visible minorities in Dawson Creek, however, is small, with 2.6% of all residents identified as a visible minority, most of whom are from China, the Philippines or South Asian<sup>5</sup> countries (Stats Can 2007h).

The population of Dawson Creek decreased between 1996 and 2001, most likely due to the decline in the mining industry that also affected Tumbler Ridge, and has only recently grown to exceed its population in 1996 (Table 4.3-7). Over this time period, the median age of the population has risen by nearly four years, which implies that younger families moved out of Dawson Creek as jobs in heavy industry disappeared, while the more senior populations stayed behind. According to the Chief Administrative Officer of Dawson Creek, however, more and more young families appear to be settling in the community (J. Chute, Pers. Comm., 2012), most likely due to the recent rebound in the mining industry.

**Table 4.3-7. Population and Demographic Changes, City of Dawson Creek 1996 to 2011**

Population and Demographics	1996	2001	2006	2011
Total Population	11,125	10,754	10,994	11,583
Population change from previous Census (%)	1.3%	-3.3%	2.2%	5.4
Males	5,440	5,255	5,435	5,690
Females	5,685	5,495	5,560	5,895
Median Age (years)	32.7	34.0	35.6	36.2
Population over 15 years (%)	75.6%	77.6%	79.4%	81.2%

Source: Stats Can (2002h, 2012d)

It was estimated that as many as 500 to 700 additional people live in Dawson Creek, but are not officially residents, living out of hotels and movable dwellings and working at various industrial projects in the area (J. Chute, Pers. Comm., 2012). This situation has become problematic as transient workers utilize community infrastructure without paying taxes for those services. This also has led to increased wear and tear on the infrastructure, and a shortage of services (K. Connelly, Pers. Comm., 2012; R. Dennis, Pers. Comm., 2012).

#### 4.3.2.2 Education, Skills, and Training

The population of the City of Dawson Creek generally exhibits a lower rate of educational attainment compared to the province, though education in the trades, similar to other communities in the RSA, is higher. Of the population over the age of 15 years in 2006, 30.1% reported to have no certified education, more than 10% higher than the Provincial average that year. The amount of people with trade certificates in Dawson Creek (13.4%) is 2.5% higher than the provincial average (10.9%); conversely the number of residents in Dawson Creek with a university certificate, diploma or degree (9.9%) is roughly half the provincial average (19.3%- see Table 4.3-8).

<sup>5</sup> Statistics Canada used this terminology in the 2006 Census. All visible minorities from South Asian countries (e.g. India, Pakistan, Sri Lanka) were aggregated into this category.

**Table 4.3-8. Maximum Level of Education Attainment as a Percent of Total Population, City of Dawson Creek 2006**

Highest Level of Schooling	City of Dawson Creek			British Columbia		
	Total	Male	Female	Total	Male	Female
Total population aged 15+	8,650	4,160	4,490	3,394,910	1,649,590	1,745,320
no high school certificate or diploma	30.1%	30.2%	29.9%	19.9%	20.3%	19.5%
high school or postsecondary certificate	29.0%	26.2%	31.5%	27.9%	26.5%	29.2%
trades certificate or diploma	13.4%	19.6%	7.6%	10.9%	14.6%	7.3%
college certificate or diploma	15.2%	13.6%	16.7%	16.7%	14.4%	18.8%
university certificate, below a bachelor	2.4%	1.9%	2.9%	5.4%	4.6%	6.2%
university certificate, diploma or degree	9.9%	8.5%	11.2%	19.3%	19.6%	19.0%

Source: Stats Can (2007a).

### Education Facilities

The public education services for elementary and secondary students are provided by School District 59 (Peace River South). Dawson Creek serves as the administrative centre for School District 59. The public elementary, middle and secondary schools in Dawson Creek and their 2010/11 student enrolments are (Dawson Creek 2011a):

- Ecole Frank Ross Elementary-English/French Immersion (442);
- Canalta Elementary (244);
- Crescent Park Elementary (240);
- Tremblay Elementary (180);
- Central Middle School (456);
- South Peace Secondary (712);
- South Peace Alternate (64); and
- South Peace Distributed Learning (150).

The private education schools and their 2010/11 student enrolments in Dawson Creek are (Dawson Creek 2011a):

- Mountain Christian School K-12 (88);
- Notre Dame K-7 (169); and
- Ron Pettigrew Christian School K-12 (85).

As of 2012, the schools in Dawson Creek could together handle an extra 200 children (R. Dennis, Pers. Comm., 2012).

NLC has its head office in Dawson Creek. The college provides many academic, vocational, continuing education, distance education, and on-line courses. NLC has an enrolment target of 1,500 student Full-Time Equivalents, though in 2012 they had an enrolment of about 1,100 Full-Time Equivalents. All levels of Apprenticeship training are also provided to work in the oil and gas or mining industry. The college is responsive to industry needs and provides training in sectors where it is needed (NLC 2012; K. Connelly, Pers. Comm., 2012; Anonymous 1, Pers. Comm., 2012).

UNBC offers several courses in Dawson Creek. UNBC and NLC publish a joint calendar which provides a listing of courses offered at both institutions (Dawson Creek 2012b; UNBC 2012-2013).

### Issues and Trends

Enrolment in post-secondary education varies depending on the state of the economy. It was noted that people would rather work with heavy industry as soon as it was possible to do so and make a substantial income, than commit the time to complete a degree or finish their schooling. Recruiting teachers is also presently an issue, particularly in the trades, as individuals certified in industrial instrumentation, for example, could earn twice salary earned as a college instructor by working directly for the oil and gas industry (Anonymous 1, Pers. Comm., 2012).

#### 4.3.2.3 *Employment*

##### Employment/Participation Rates

Of the population of Dawson Creek aged 15 and above in 2006 (Table 4.3-9), the labour force participation rate was 71.9%. This was more than 6% higher than provincial rate of 65.6% at that time. It was also 2.3% higher than the city's participation rate in 2001. As in the province, men in the town reported slightly higher participation rates than women (Stats Can 2002h, 2007h).

**Table 4.3-9. Labour Force Data for the City of Dawson Creek and British Columbia, 2001 to 2006**

Labour Force	City of Dawson Creek, 2001			City of Dawson Creek, 2006			British Columbia, 2006		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
Total Population 15+	8,340	4,020	4,320	8,650	4,155	4,490	3,394,910	1,649,590	1,745,320
Participation Rate	69.6%	75.5%	64.0%	71.9%	79.8%	64.6%	65.6%	70.7%	60.7%
Employment Rate	62.3%	65.1%	59.8%	67.5%	74.6%	60.8%	61.6%	66.7%	56.9%
Unemployment Rate	10.3%	13.9%	6.7%	6.1%	6.3%	5.9%	6.0%	5.8 %	6.3%

Source: Stats Can (2002b, 2007a)

Tradespeople (e.g. mechanics, welders, pipe-fitters, and millwrights) in the community of Dawson Creek are currently in short supply and high demand. Many tradespeople live in Dawson Creek, but they are typically employed outside of their community by heavy industry. With skill sets that are transferrable, they are able to move with ease between the oil and gas, mining and energy sectors, earning high wages. This has caused a shortage of tradespeople working within the community itself; local business owners are finding it difficult, for example, to hire someone locally to repair electrical or plumbing problems in their places of business (S. Kenny, Pers. Comm., 2012).

### Unemployment

Of the population participating in the labour market in 2006, a total of 380 people were unemployed (Stats Can 2007h). This corresponds to a 6.1% unemployment rate, nearly identical to that of the province as a whole (Table 4.3-9). It is a significant decrease from the city's 10.3% unemployment rate in 2001.

#### 4.3.2.4 *Incomes and Earnings*

The population 15 years and over in the City of Dawson Creek reported median earnings of \$28,141 in 2005, which was 9.4% higher than the provincial median (\$25,722- Table 4.3-10). Annual median earnings for men in the town were \$36,960, while women earned a median of \$20,831 (Stats Can 2007h).

**Table 4.3-10. Earnings and Income Data for the City of Dawson Creek Population 15 Years and Over, 2005**

Earnings and Income	City of Dawson Creek, 2005			British Columbia, 2005		
	Total	Male	Female	Total	Male	Female
Annual median earnings	\$28,141	\$36,960	\$20,831	\$25,722	\$32,375	\$20,458
Annual full-time median earnings	\$41,691	\$51,661	\$32,773	\$42,230	\$48,070	\$36,739
Earnings as a % of total income	81.5	86.2	73.5	75.1	78.5	69.8
Government transfers as a % of total income	10.9	6.8	17.6	10.7	7.9	15.0
Other money as a % of total income	7.6	6.8	8.9	14.2	13.6	15.2

Source: Stats Can (2007a)

Full-time earnings were notably higher, with the median in the City estimated at \$41,691 in 2005. This, however, was slightly lower than the provincial level at \$42,230. The men earned an average 7.5% more than their provincial counterparts, while the women earned 10.8% less than their provincial counterparts (Stats Can 2007h).

On average, earnings comprised nearly 82% of total income, while government transfers accounted for an additional 11% (Table 4.3-10). In total, earnings constituted a larger portion of income in Dawson Creek than provincially (75%).

#### 4.3.2.5 Economy and Business Environment

##### Overview

The City of Dawson Creek was traditionally an agricultural community, and the service hub for the agricultural industry in the region (Plate 4.3-4). In the early 1990s, the economy in Dawson Creek was poor due to the decline in the farming industry. According to the Chief Administrative Officer (CAO) for Dawson Creek, when the natural gas industry arrived in the area, it provided jobs for the farmers in the winter in exploration activities (J. Chute, Pers. Comm., 2012).



Plate 4.3-4. Former grain elevator, city of Dawson Creek.

Today, Dawson Creek's economic base has diversified to include agriculture, energy (oil and gas), forestry, mining, and tourism. Agricultural activities include production of hay and field crops (i.e. wheat, oats, barley, canola, and alfalfa), and livestock operations (i.e. beef, bison, poultry, and hogs). There is a growing number of farms in the region producing certified organic food products, and Peace BioFuels is proposing a plant that would produce 40 million litres of biodiesel annually (Dawson Creek 2011a).

The energy sector creates a lot of employment and generates revenues for the local economy and the province. There are many corporations active in the area, such as Murphy Oil Corporation, ARC Energy Trust, Pengrowth Energy Trust, EnCana Corporation, Spectra Energy Corp., Shell Canada Ltd., Apache Canada Ltd., and Alta Gas Ltd. (Dawson Creek 2011a). Trucking companies servicing the oil and gas sector are also doing very well, and Dawson Creek consequently has a vibrant trucking industry (K. Connelly and K. Cooke, Pers. Comm., 2012). Mining is a significant employment and revenue source to the area as well. There are several nearby coal mines operated by Walter Energy and Anglo American (see Section 4.2.7).

Forestry provides opportunities in harvesting and processing, as well as production of remanufactured products, engineered wood products, panel boards and furniture and housing products. Louisiana-Pacific Corporation operated an oriented strand board plant in Dawson Creek, one of the three wood product manufacturing facilities in the South Peace (Dawson Creek 2011a), though the plant shut down in December of 2011.

The AltaGas Bear Mountain Wind Park, located to the southwest of Dawson Creek, is the first fully operational wind park in BC. The wind park was established by the Peace Energy Cooperative and features a single row of 34 wind turbine generators each producing 3 megawatts of energy. The park delivers enough energy to power most of British Columbia's South Peace region (SPEDC 2012d).

Dawson Creek has the largest livestock auction market in western Canada, and their livestock auction is considered a keystone business in the community (K. Connelly and K. Cooke, Pers. Comm., 2012), with \$36 million in livestock and \$500,000 in annual wages in 2011. Though they only directly employ 14 people, indirectly they employ a number of trucking companies in town to transport livestock between B.C. and Alberta. Tourism is a growing industry in the region, with tourists coming from Canada (49%), US (45%) and Overseas (6%; Dawson Creek 2011a).

#### Labour Force Statistics

The key industries in the City of Dawson Creek by labour force in 2006 were retail trade (16.3%), business services (14.1%), and health care and social services (11.0%; Table 4.3-11). Other small services comprised 20.9% of the total labour force. The male population was predominantly involved in construction, business services, and retail trade. The female population was mostly employed in retail trade, health care and social services, business services, and educational services (Stats Can 2007h). Notably, retail trade in Dawson Creek was five percentage points higher than the provincial average, though the reason for this is unclear. On the other hand, the higher percentages of people employed in construction and resource-based industries is reflective of the economic boom in primary resource industries in the RSA.

Labour force by occupation figures were broadly similar to provincial trends (Table 4.3-12). In 2006, the majority of the working population was employed in occupations related to sales and service (28.8%), followed by trades, transport, and equipment operators (19.7%) and business, finance, and administration (14.0%). Men tended to be employed in trades, transport, and equipment operation; sales and service; and management; while women were primarily employed in sales and service; business, finance and administration; and social science, education, government and religion (Table 4.3-12).



**Table 4.3-11. Industry Significance by Labour Force, City of Dawson Creek 2006**

Industry	City of Dawson Creek				BC Total % Distribution
	Total	Male	Female	Total % Distribution	
Total experienced labour force over 15	6,170	3,290	2,880	100%	100%
Agriculture and other resource-based industries	440	370	70	7.1%	4.9%
Construction	600	540	55	9.7%	7.6%
Manufacturing	365	315	50	5.9%	8.6%
Wholesale trade	215	175	40	3.5%	4.2%
Retail trade	1,010	475	530	16.4%	11.4%
Finance and real estate	285	95	180	4.6%	6.2%
Health care and social services	680	155	525	11.0%	9.7%
Educational services	430	120	305	7.0%	7.0%
Business services	870	515	355	14.1%	19.9%
Other services	1,290	520	760	20.9%	20.6%

Source: Stats Can (2007a)

**Table 4.3-12. Experienced Labour Force by Occupation, City of Dawson Creek 2006**

Occupation	City of Dawson Creek				BC Total % Distribution
	Total	Male	Female	Total % Distribution	
Total experienced labour force over 15	6,175	3,290	2,885	100%	100%
Management	610	370	240	9.9%	10.5%
Business, finance, administration.	865	160	700	14.0%	17.1%
Natural sciences	195	170	20	3.2%	6.3%
Health occupations	385	95	290	6.2%	5.5%
Social science/education/government/religion	460	140	315	7.4%	8.1%
Art, culture, recreation, sport	160	90	70	2.6%	3.5%
Sales and service	1,780	625	1,150	28.8%	25.3%
Trades, transport, and equipment operators	1,215	1,175	40	19.7%	15.5%
Primary industry	315	290	20	5.1%	3.9%
Processing, manufacturing and utilities	190	160	30	3.1%	4.2%

Source: Stats Can (2007a)

### Business Support

The City of Dawson Creek hosts a variety of businesses and services, such as accommodations, retail, business, commercial and industrial services. Due to the upturn in the regional economy, and an increase in mining and energy exploration and development, there has been a boom in recent years in residential, hotel and restaurant construction (S. Connelly, Pers. Comm., 2012; K. Connelly and K. Cooke, Pers. Comm., 2012).

Dawson Creek's Chamber of Commerce, which also represents business interests in Tumbler Ridge, advocates for businesses in the community and actively encourages heavy industry to invest locally (DCDCC n.d.).

#### 4.3.2.6 *Social and Health*

The City of Dawson Creek is located within the Northeast HSDA of the NHA, and Peace River South LHA 59 (BC Stats 2012h). In 2006, the City of Dawson Creek accounted for 42.4% of the LHA 59's population (BC Stats 2012i).

The Dawson Creek and District Hospital is a full diagnostic and treatment centre, and offers a complete range of in-patient services in medicine, surgery, obstetrics, psychiatry and rehabilitative medicine. The hospital also offers a wide range of out-patient services including day surgery, 24/7 emergency room, x-ray, ultrasound, CT scan and laboratory services, physiotherapy, occupational therapy and respiratory therapy services. The hospital's current practicing staffs are: 19 family doctors, two orthopaedic surgeons, one radiologist, one gynaecologist, two psychiatrists, and one general surgeon. Other specialists regularly visit the area as needed (Dawson Creek 2011a).

The Peace River Health Unit offers public health services to city residents including the services of a medical health officer and public health nurse (Dawson Creek 2011a). The city also has other health professionals who provide health services to the residents, such as private physiotherapy, registered massage therapy, and dental care (Dawson Creek 2011a).

The city has three facilities which offer different levels of geriatric services to its senior citizens, such as intermediate care, day care, and independent or assisted living. A new \$25.6 million expansion called Rotary Manor II will add 71 residential care beds to the existing Rotary Manor (Dawson Creek 2011a).

A range of other health and social services are available within the community, including mental health, substance misuse counselling, disability services and language development.

The city has 16 licensed family daycares, as well as out-of-school care, and pre-school facilities for its youngest residents. Daycare services are offered by the Building Blocks Child Care Centre, Campus Kids Daycare, the Child Development Centre and the Kiwanis Child Care Centre. Out-of-school care is offered by several elementary schools, the City's Recreation Department, and the Youth Care Centre (Dawson Creek 2011b).

#### Social and Health Issues

Daycare spaces, or lack of them, are an ongoing issue in Dawson Creek due to the influx of young families to the city following jobs provided by heavy industry (J. Chute, Pers. Comm., 2012).

Drug and alcohol issues are the underlying causes for most crime in the Dawson Creek area. According to local RCMP officers, organized crime is attracted to the area due to the amount of disposable income in the city. (D. Traichevich, Pers. Comm., 2012).

The Dawson Creek fire department has noticed an increase in traffic and motor vehicle accidents as economic activity has increased in recent years. The fire department in Dawson Creek responds to about 400 calls per year, the majority of them being motor vehicle accidents. There has also been an increase in the discovery of drug houses in the city (G. Smith, Pers. Comm., 2012).

#### 4.3.2.7 Infrastructure

The City of Dawson Creek OCP (Bylaw No. 4042, 2009) defines the principles, objectives and policies for land use and development, and it is intended to provide the policy framework within which planning decisions are made by the City Council. The city's OCP addresses: residential land use; commercial, industrial, institutional, agricultural, recreational, and public utility land uses; community-oriented transportation; hazardous or environmentally sensitive areas; infrastructure; public facilities; and housing policies respecting affordable, rental and special needs housing. It also includes land-use maps outlining various zoning designations (Dawson Creek 2009).

#### Housing

The City of Dawson Creek accounted for 5,406 of BC's 1,945,365 private dwellings in 2011. Out of these, 4,859 (89.8%) were occupied by usual residents. Approximately 65% of dwellings were considered to be single-detached structures, while 30.2% were semi-detached, row houses and/or apartment buildings (Stats Can 2012d). Apartment vacancy rates in Dawson Creek in 2011 were 0% for a Bachelor suite (average rent \$629), 1.2% for a one-bedroom (average rent \$734), 1.6% for a two-bedroom (average rent \$961), and 7.4% for a three-bedroom suite (average rent \$1,087; Dawson Creek 2011b). Residential resale prices in 2010 averaged \$232,922, up 166% from 2002. However, sale prices dipped slightly in 2011 to \$229,973, the first time since 2003. The average assessed value of a single-family home in Dawson Creek was \$212,870 (Dawson Creek 2011b).

The housing market in Dawson Creek is booming because of the economic upturn in the region. The housing shortage is a notable issue in Dawson Creek, which has led to increasing prices. The amount of land available to the city to grow outward is quickly decreasing short of removing land from the Agricultural Land Reserve. In order to meet the demand on housing in the city, it is predicted that Dawson Creek will start growing upward, with new structures increasing to six storeys or more (G. Smith, Pers. Comm., 2012). New development permits are being approved every month by city council (S. Kenny, Pers. Comm., 2012).

Dawson Creek Native Housing Society was incorporated as a non-profit society in 1984. The mandate of the society is to construct, manage, and provide affordable rental accommodation for low-income persons of Aboriginal ancestry in Dawson Creek. As of 2011, the society managed 53 single-family units scattered throughout the city. Driver House, opened in 2010, was a partnership between the Province of BC, the City of Dawson Creek and the Dawson Creek Native Housing Society, which operates the development. There are 25 affordable apartments in this complex, which houses mainly Aboriginal elders and families (BC Newsroom 2011).

Dawson Creek is the only community in the area that prohibits work camps within their boundaries (J. Chute, Pers. Comm., 2012). As such, many of the transient workers are using motor homes or live in the city's hotels. Private companies will buy entire floors worth of hotel rooms for years at a time (K. Connelly and K. Cooke, Pers. Comm., 2012).

#### Services and Amenities

The City of Dawson Creek currently provides a very high level of services and amenities to its residents for its size (J. Chute, Pers. Comm., 2012). The community also provides indoor recreation facilities, such as the Kenn Borek Aquatic Centre, Memorial and Kin Arenas, Dawson Creek Curling Rink, the EnCana Events Centre (Plate 4.3-5) and the Lakota indoor [horse] riding area (Dawson Creek 2011b). The community has 14 community parks, an 18-hole golf course, tennis and basketball courts, baseball and softball diamonds, and soccer pitches (Dawson Creek 2011b).



Plate 4.3-5. EnCana Events Centre, city of Dawson Creek.

#### 4.3.2.8 Utilities

##### Water

The city procures its water supply from the Kiskatinaw River and has invested in an advanced water treatment plant. High quality treated water is supplied to all residents and businesses within Dawson Creek. All properties are metered for water consumption. Due to the fact that there are no reasonable alternative sources of water, coupled with escalating pressures from logging and gas exploration in the area, the city has recently instituted a Watershed Stewardship Program, in order to minimize any impacts on water quality and quantity (Dawson Creek 2011b, 2012b).

Dawson Creek is the only community in the northeast that is not proximate to surface water. According to the CAO for Dawson Creek, the Kiskatinaw River is a poor source of water, both in terms of volume and quality (J. Chute, Pers. Comm., 2012). Moreover, the natural gas industry is currently using up to 30% of the city's potable treated water for fracking, which is straining their water supply. Currently, they are able to store up to three months' worth of water; however, they require a proper water reservoir with a year's worth of storage. Lack of water could affect the city's future growth if these improvements are not made (J. Chute, Pers. Comm., 2012).

##### Sewage and Garbage

A modern sanitary sewer system is serving the municipality of Dawson Creek, which can accommodate future growth (Dawson Creek 2011a, 2012b). The current municipal garbage collector is Waste Management, Inc. Commercial garbage is collected by three service providers, who provide commercial garbage containers to their customers (Dawson Creek 2011b).

##### Heating and Electricity

BC Hydro provides the City of Dawson Creek BC residents and businesses with electricity, while Pacific Northern Gas provides natural gas to residential, commercial, and industrial customers (Dawson Creek 2011b).

#### 4.3.2.9 *Communications*

Telephone service in the City of Dawson Creek is provided by Telus, while long-distance and mobile subscribers have additional choices among national retailers. Internet services are supplied by two local providers, as well as by Telus and Shaw Cable, or via satellite through Xplornet. The Dawson Creek Municipal Public Library provides free public internet service through the Community Access Program (Dawson Creek 2011b).

#### 4.3.2.10 *Transportation*

Dawson Creek is served by several Highways. Highway 97 North (Alaska Highway) provides access to Fort St. John and Fort Nelson, while Highway 97 South (John Hart Highway) travels southwest to Chetwynd and Prince George. The Heritage Highway 52 provides access south to Tumbler Ridge, while Highway 49 and Highway 2 connect the town with northern and southern Alberta (Dawson Creek 2011b, 2012b).

The City of Dawson Creek Airport has one 5,000 feet runway and one 5,000 feet water aerodrome, which are not long enough to accommodate larger international or domestic carriers (J. Chute, Pers. Com., 2012). The Chamber of Commerce has been lobbying for a longer runway in Dawson Creek, as they believe they are losing business to larger communities (K. Connelly and K. Cooke, Pers. Comm., 2012).

Air and road transport are discussed in more detail in Section 4.2.4.

#### 4.3.2.11 *Emergency and Protection Services*

The City of Dawson Creek has developed an extensive Municipal Emergency Plan with an objective of protecting the health, safety and property of the community. The plan outlines preparation and planning steps, response and action to an emergency and a recovery plan (Dawson Creek 2006).

Dawson Creek has a 24-member RCMP detachment that polices an area of approximately 6,000 square miles and includes Pouce Coupe, Rolla, Arras, Farmington and Kelly Lake. The detachment provides general duty policing, South Peace traffic services, general investigation services and community policing (Dawson Creek 2011b, 2012b).

The City of Dawson Creek Fire Department provides fire and rescue services to the city and surrounding fire protection area (an 8 km circle around the city, through a contract with the PRRD). They also have a contract with the pulp and paper mill in Chetwynd to provide firefighting services to them (as opposed to the Chetwynd Fire Department). The department staffs 16 full-time paid firefighters, and 7 auxiliary volunteer firefighters. It is well equipped with 8 pieces of modern firefighting equipment and all necessary equipment and supplies. The Dawson Creek Fire Department is also the dispatch centre for six volunteer fire departments in the rural areas- Tomslake, Pouce Coupe, Tumbler Ridge, Chetwynd, Moberly Lake and Arras (Dawson Creek 2011b; G. Smith, Pers. Comm., 2012). Funding at the moment is sufficient to meet their mandate; however, they are outgrowing their budget and equipment, and adequate staffing is currently an issue (G. Smith, Pers. Comm., 2012).

The City of Dawson Creek's BC Ambulance Service is responsible for emergency transportation of sick and/or injured individuals. The department has 21 paramedics (4 full-time and 17 part-time) and 3 emergency vehicles. The response area from Dawson Creek includes all of the Peace Region and those areas of Alberta close to the border. They respond to 1,500-2,000 calls annually. Dawson Creek is also the regional training centre for paramedics in the Peace Region (Dawson Creek 2011b).

### 4.3.3 District of Chetwynd

The District of Chetwynd, located in the foothills of the Canadian Rocky Mountains, serves as BC's entrance to northeastern BC. The community is located at the junction of Highway 97 and Highway 29 and the CN Rail mainline; it is 310 km north of Prince George and 100 km west of Dawson Creek (Figure 3.1-1). Until 1912, when the first European settlers arrived, Chetwynd was known as Little Prairie. The town name was changed to Chetwynd, after the establishment of the Pacific Great East Railway, in honour of Ralph Chetwynd, a provincial Highways Minister and one of the town's founding fathers. In 1962, Chetwynd was incorporated as a municipality. Chetwynd serves as a natural transportation hub for the Peace River area, and is the commercial centre for the rural communities of Moberly Lake, Jackfish Lake, Lone Prairie, and the Pine River Valley (BritishColumbia.com 2012a; Chetwynd 2012c).

Apart from the District's incorporated area, Chetwynd also holds five "satellite" boundary areas. The provincial Ministry of Municipal Affairs allowed the District to obtain these areas in order to utilize the tax revenue. These satellite areas are the locations of heavy industrial projects, whose employees tend to live in Chetwynd (D. Fleming, Pers. Comm., 2012).

The District of Chetwynd is represented by a Mayor and six Councillors elected at-large every three years (Plate 4.3-6). The total operating budget for the District in 2011 was slightly over \$7.8 million (Chetwynd 2012a).



Plate 4.3-6. District Office, District of Chetwynd.

#### 4.3.3.1 Population and Demographics

According to the 2011 Census, the population of Chetwynd totalled 2,635, nearly identical to that of 2006 and comparable to the population of Tumbler Ridge. Fifty-two percent of all residents are male, which is the opposite trend to the province's gender ratio statistics. The median age for the community was estimated at 32.6 years, which was 9.3 years younger than the provincial median. Chetwynd's population over the age of 15 was reported at 78.5%, nearly the same as that reported across the Province as a whole (Stats Can 2012c).

Because of the proximity of the First Nations communities at Moberly Lake (see Sections 4.3.5 and 4.3.6), the Aboriginal population of the Chetwynd is high relative to other communities in the RSA. According to the 2006 Census, 19.2% of residents of Chetwynd identified themselves as Aboriginal, compared to 12% regionally. The presence of visible minorities in Chetwynd, however, is small, with 3% of all residents identified as a visible minority, all of whom are from China or Latin American countries (Stats Can 2007g).

According to Census data, the population of Chetwynd declined 13.1% between 1996 and 2001, most likely due to the economic downturn in the northeast region as a whole. The median age also rose by 3.2 years during that same period, which implies that younger families moved out of Chetwynd as jobs in heavy industry disappeared, while the more senior populations stayed behind (Table 4.3-13).

**Table 4.3-13. Population and Demographic Changes, District of Chetwynd 1996 to 2011**

Population and Demographics	1996	2001	2006	2011
Total Population	2,980	2,591	2,633	2,635
Population change from previous Census (%)	4.8%	-13.1%	1.6%	0.1%
Males	1,545	1,335	1,365	1,360
Females	1,430	1,255	1,265	1,275
Median Age (yrs)	27.9	31.1	32.8	32.6
Population over 15 years (%)	71.8%	74.8%	76.9%	78.5%

Source: Stats Can (1997b, 2002c, 2007g, 2012c)

The District of Chetwynd in 2012 conducted its own municipal census. They believed their population to be 30-50% higher than the Census of Canada had recorded, due to the “shadow population” in work camps in the area utilizing the community’s services (Chetwynd Echo 2012; D. Fleming, Pers. Comm., 2012). Information is not readily available on the results of the Census, or whether the results have been released.

#### 4.3.3.2 Education, Skills, and Training

The population of the District of Chetwynd generally exhibits a lower rate of educational attainment compared to the province, though education in the trades, similar to other communities in the RSA, is higher. Of the population over the age of 15, approximately 24.4% reported to have no certified education, more than 4 percentage points higher than the provincial average. Fourteen percent of the population had trade certificates (compared to provincial average of 10.9%), though the percentage of people with university degrees or diplomas (7.1%) is far below the provincial average (Table 4.3-14).

**Table 4.3-14. Maximum Level of Education Attainment as a Percent of Total Population, District of Chetwynd 2006**

Highest Level of Schooling	District of Chetwynd			British Columbia		
	Total	Male	Female	Total	Male	Female
Total population aged 15+	2,030	1,065	970	3,394,910	1,649,590	1,745,320
no high school certificate or diploma	24.4%	23.9%	24.7%	19.9%	20.3%	19.5%
high school or postsecondary certificate	30.5%	25.8%	35.1%	27.9%	26.5%	29.2%
trades certificate or diploma	14.0%	18.8%	8.8%	10.9%	14.6%	7.3%
college certificate or diploma	20.4%	21.1%	19.6%	16.7%	14.4%	18.8%
university certificate, below a bachelor	3.4%	3.8%	3.1%	5.4%	4.6%	6.2%
university certificate, diploma or degree	7.1%	6.1%	7.7%	19.3%	19.6%	19.0%

Source: Stats Can (2007g).



### Education Facilities

The public education services for elementary and secondary students are provided by School District 59 (Peace River South). The public elementary and secondary schools in Chetwynd and their 2011/12 enrolments are (Dawson Creek 2011b; Chetwynd 2012c):

- Don Titus Elementary (106);
- Little Prairie Elementary (217);
- Moberly Lake Elementary (36);
- Windrem Elementary School (88); and
- Chetwynd Secondary School (354).

Peace Christian School is the only private school in Chetwynd. There were 111 students enrolled in this school for the 2011/12 school year (Dawson Creek 2011b; Chetwynd 2012c).

NLC has a campus in Chetwynd and provides programs such as Applied Business Technology, Career and College Preparation, University Arts and Sciences, Trades and Apprenticeship, and Workforce Training/Continuing Education (NLC 2012).

#### 4.3.3.3 *Employment*

##### Employment/Participation Rates

Of the labour force aged 15 and above in 2006 (Table 4.3-15), the participation rate in the District of Chetwynd was 76.4%, an increase from 2001 (72.1%) and above the 2006 provincial rate of 65.6%. As in the province, men in the town reported higher participation rates than women. Notably, the employment rate for men increased by nearly 14 percentage points, and for women by nearly 15 percentage points between 2001 and 2006. This is reflective of the upturn in the economy in the RSA in that time period, but particularly so for Chetwynd. In 2001, the Louisiana Pacific pulp mill, which employed 192 people as well as 90 contract loggers (Pulp and Paper Canada 2001), closed down (Peace River Block Daily News 2001). When Tembec purchased the mill from Louisiana Pacific in 2002, most or all of these employees were re-hired (ForestTalk.com 2012).

**Table 4.3-15. Labour Force Data for the District of Chetwynd and British Columbia, 2001 to 2006**

Labour Force	District of Chetwynd, 2001			District of Chetwynd, 2006			British Columbia, 2006		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
Total Population 15+	1,940	1,000	950	2,035	1,065	970	3,394,910	1,649,590	1,745,320
Participation Rate	72.1%	82.2%	62.0%	76.4%	84.0%	68.0%	65.6%	70.7%	60.7%
Employment Rate	58.3%	66.5%	49.7%	72.0%	78.9%	64.4%	61.6%	66.7%	56.9%
Unemployment Rate	19.1%	18.5%	19.8%	5.8%	6.1%	4.5%	6.0%	5.8%	6.3%

Source: Stats Can (2002c, 2007g)

##### Unemployment

Of the population participating in the labour market in 2006, a total of 90 people were unemployed. This corresponds to a 5.8% unemployment rate, which was slightly below the provincial rate of 6%. This is a significant improvement from 2001, when the region was in the midst of an economic downturn, and unemployment was estimated at 19.1% (Stats Can 2002c, 2007g).



#### 4.3.3.4 Incomes and Earnings

The population over 15 years reported median earnings of \$28,738 in 2005, which was 11.7% higher than the provincial levels at \$25,722 (Table 4.3-16). Annual median earnings for men in the town were at \$51,134, while women earned a median of \$15,503; in other words, men earned more than triple that earned by women, reflective of the District's reliance on typically male-dominated industries such as forestry (Stats Can 2007g).

**Table 4.3-16. Earnings and Income Data for the District of Chetwynd Population 15 Years and Over, 2005**

Earnings and Income	District of Chetwynd, 2005			British Columbia, 2005		
	Total	Male	Female	Total	Male	Female
Annual median earnings	\$28,738	\$51,134	\$15,503	\$25,722	\$32,375	\$20,458
Annual full-time median earnings	\$51,153	\$63,548	\$30,613	\$42,230	\$48,070	\$36,739
Earnings as a % of total income	88.2	90.9	80.6	75.1	78.5	69.8
Government transfers as a % of total income	6.4	3.5	13.7	10.7	7.9	15.0
Other money as a % of total income	5.6	5.6	5.6	14.2	13.6	15.2

Source: Stats Can (2007g)

Full-time earnings were significantly higher, with the median in the District of Chetwynd estimated at \$51,153 in 2005, which was 21.1% higher than the provincial level at \$42,230. Men earned about one third more than their provincial counterparts, while women earned about 17% less than their provincial counterparts (Stats Can 2007g). Women in Chetwynd earned nearly 52% less in full-time earnings than men.

On average, earnings comprised over 88% of total income, while government transfers accounted for an additional 6.4% (Table 4.3-16). In total, earnings constituted a larger portion of income in Chetwynd than provincially (75%).

#### 4.3.3.5 Economy and Business Environment

##### Overview

The District of Chetwynd has a diverse economy that includes agriculture (ranching), energy (oil and gas, wind mills), forestry, mining, and tourism. Pipeline construction and oil and gas drilling is being managed by five major multinational companies who are continuing to expand their activities in the area (SPEDC 2012a). The Dokie Wind Farm Project (owned by Dokie General Partnership, operated by Alterra Power) started commercial production in February 2011 and operates 48 wind turbines (Canada Newswire 2011). It is the largest commercial wind farm operation in British Columbia (Alterra n.d.). In addition, Avro Wind Energy and Finavera Wind Energy are developing the Wartenbe Wind Energy Project and Wildmare Energy Project (Finavera 2011d; EAO n.d.).

Forestry provides opportunities in harvesting, sawmilling, as well as in pulp and paper production. There are three well-established forestry facilities in Chetwynd: West Fraser Mills (Chetwynd Forest Industries) and Canfor operate sawmills, and Tembec has a pulp and paper mill. The Tembec pulp mill has just recently been idled indefinitely due to the softening of the high-yield pulp market (ForestTalk.com 2012). The District of Chetwynd also is in partnership with the WMFN and Sauteau First Nations in a Community Forest<sup>6</sup> (D. Fleming, Pers. Comm., 2012).

<sup>6</sup> A community forest is any forestry operation managed by a local government, community group, or First Nation for the benefit of the entire community. Through the BC Forestry Revitalization Plan and timber reallocation, approximately 1.2 million cubic metres of timber were made available for small tenures such as community forests and woodlots. Harvest rates and exact location within the tenure can be set to meet locally determined objectives and interests (MFLNRO 2012).

Walter Energy is currently operating the Willow Creek and Brule coal mines to the west and south of Chetwynd, respectively (see Section 4.2.6.1). In addition, they have been conducting mineral exploration on its Mt. Hudette/Brazion property near the Brule Mine. A short distance to the northwest, the Mink Creek West project has been the object of exploration drilling. Mining projects near Chetwynd employ some 600 people annually (DeGrace 2011; SPEDC 2012a).

Tourism is a growing industry in the region. The most famous local tourist attraction is the Annual Chetwynd International Chainsaw Carving Championship (Chetwynd 2012c).

While Chetwynd is considered to be on the western fringe of the oil and gas extraction area in the Peace Region, the location of the CN Rail head in the District is advantageous for them in providing many of the support services for the oil and gas industry. For example, a sand silo and storage facility was recently erected in Chetwynd in order to supply the material used in hydraulic fracturing or “fracking” (D. Fleming, Pers. Comm., 2012).

### Labour Force Statistics

The key industries in the District of Chetwynd by labour force in 2006 were agriculture and other resource-based industries (22.3%), manufacturing (14.9%), business services (14.6%), and various other small services (14.3%- see Table 4.3-17). The male population was predominantly involved in agriculture and other resource-based industries, manufacturing, business services, and construction. The female population was mostly employed in business services, retail trade, and educational services (Stats Can 2007g).

**Table 4.3-17. Industry Significance by Labour Force, District of Chetwynd 2006**

Industry	District of Chetwynd				BC Total % Distribution
	Total	Male	Female	Total % Distribution	
Total experienced labour force over 15	1,545	890	655	100%	100%
Agriculture and other resource-based industries	345	275	70	22.3%	4.9%
Construction	110	100	10	7.1%	7.6%
Manufacturing	230	200	25	14.9%	8.6%
Wholesale trade	25	25	10	1.6%	4.2%
Retail trade	115	20	95	7.4%	11.4%
Finance and real estate	90	25	70	5.8%	6.2%
Health care and social services	65	0	65	4.2%	9.7%
Educational services	110	30	80	7.1%	7.0%
Business services	225	120	110	14.6%	19.9%
Other services	220	90	130	14.2%	20.6%

Source: Stats Can (2007g)

The majority of the working population is employed in occupations related to trades, transport, and equipment operators (25.2%), followed by sales and service (19.7%) and business, finance, and administration (15.5%). Men tended to be employed in trades, transport, and equipment operation; processing, manufacturing and utilities; and natural sciences; while women were primarily employed in sales and service; business, finance and administration; and management (Table 4.3-18).

**Table 4.3-18. Experienced Labour Force by Occupation, District of Chetwynd 2006**

Occupation	District of Chetwynd				BC Total % Distribution
	Total	Male	Female	Total % Distribution	
Total experienced labour force over 15	1,545	895	650	100%	100%
Management	145	75	65	9.4%	10.5%
Business, finance, administration.	240	50	190	15.5%	17.1%
Natural sciences	120	105	20	7.8%	6.3%
Health occupations	30	0	30	1.9%	5.5%
Social science/education/government/religion	60	25	35	3.9%	8.1%
Art, culture, recreation, sport	30	20	0	1.9%	3.5%
Sales and service	305	65	240	19.7%	25.3%
Trades, transport, and equipment operators	390	330	60	25.2%	15.5%
Primary industry	95	90	0	6.1%	3.9%
Processing, manufacturing and utilities	125	125	0	8.1%	4.2%

Source: Stats Can (2007g)

As with other communities in the Peace Region, there is a shortage of available skilled tradespeople as most are already employed in heavy industry. As a result, labourers from as far as Prince George or Vancouver are contracted for work, effectively tripling the cost (L. Sabulsky, Pers. Comm., 2012). The available skill sets within the community have also traditionally been used by the forest industry, the mining and oil and gas industries being more recent arrivals to the area. As such the transition of skill sets within the community is ongoing (D. Fleming and E. Davis, Pers. Comm., 2012).

### Businesses

The District of Chetwynd hosts a variety of businesses and services, such as accommodations, grocery and retail services, food, commercial and industrial services. A complete list of businesses and services is provided on the city's website (Chetwynd 2012b). The Chetwynd Chamber of Commerce promotes and improves trade and commerce in Chetwynd and the surrounding area (CCOC n.d.).

#### 4.3.3.6 Social and Health

The District of Chetwynd is within the NHA, Northeast HSDA, and Peace River South LHA 59 (BC Stats 2012h). The District of Chetwynd accounts for 10.2% of the LHA 59's population (BC Stats 2012i).

Chetwynd and District Hospital and Chetwynd Health Centre provide basic health care services to residents of the District of Chetwynd (HealthLinkBC 2012a). The hospital provides medical services 24 hours a day, seven days a week. Emergency room and X-ray, mental and public health services are also provided (SPEDC 2012d).

There are four physicians and two dentists providing services in Chetwynd (InvestBC n.d.-b). There is also a massage therapy clinic, a chiropractic clinic, and an optometrist in the community (Chetwynd 2012b).

Surerus Place is a new, 12-unit senior's home complex, with four rooms being designated as assisted living and the remaining eight rooms being designated as supported living. Little Prairie Haven is an older seniors complex with 12 units designated as independent housing (SPEDC 2012d).

Chetwynd has four daycare facilities for its youngest residents (Chetwynd 2012c). The community provides indoor recreation facilities such as the Chetwynd & District Leisure Pool, Chetwynd & District Recreation Centre, and the Chetwynd Curling Rink (Chetwynd 2012c). The community also provides

several outdoor recreation facilities, such as two golf courses, six ball diamonds, a Fit Park, Skateboard Park and soccer fields, and 11 playgrounds. (Chetwynd 2012c).

#### Issues and Trends

Currently there is a doctor shortage in Chetwynd, which is putting a strain on the provision of medical services (D. Fleming, Pers. Comm., 2012).

#### *4.3.3.7 Infrastructure*

The District of Chetwynd OCP is the guiding document that serves as the foundation for all policies, regulations and decisions pertaining to land use and development in the District (Chetwynd 2012c). According to the CAO for Chetwynd, the community has room to grow to as much as double its current size. However, some of their infrastructure is currently at capacity and at the end of its lifespan, and will need to be replaced to meet increased demand (D. Fleming, Pers. Comm., 2012).

#### Housing

The District of Chetwynd accounted for 1,119 of BC's 1,945,365 private dwellings in 2011. Out of these, 50% were considered to be single-detached structures, 12.5% were considered "movable dwellings", and the rest were semi-detached, row houses and/or apartment buildings. In 2010, the average housing values in Chetwynd were \$161,518 for a single family home, and \$75,357 for a multi-family home (InvestBC n.d.-b).

Like all communities in the northeast, there is a housing shortage in Chetwynd. In 2012, housing in Chetwynd was estimated to be 30% over capacity (D. Fleming, Pers. Comm., 2012). Some of the companies involved in heavy industry in the area have considered developing property for housing their employees; however, they have been hesitant to make such a large investment due to their experience with previous boom-and-bust cycles. Currently, the District of Chetwynd is looking at re-zoning some land to allow for more multi-family residential opportunities. (D. Fleming, Pers. Comm., 2012).

#### *4.3.3.8 Utilities*

The District of Chetwynd provides a municipal water system and sewage system to its residents. The Engineering Department is responsible for the planning, construction and/or restoration of water and sewer infrastructure, while the Public Works Department is responsible for the maintenance of the water and sewer infrastructure (Chetwynd 2012c).

#### Water

The primary water source for the District of Chetwynd is Pine River, which is treated prior to distribution. Well water is also available for backup purposes and goes through the same water treatment (InvestBC n.d.-b). Water meters have been installed for all water customers (InvestBC n.d.-b).

The treatment plant and reservoirs are currently too small to meet the needs of the community, and will require expansion. The same is also true of their sewage treatment facilities (D. Fleming, Pers. Comm., 2012).

#### Sewage and Garbage

A modern sanitary sewer and waste water system is serving the District of Chetwynd (InvestBC n.d.-b). The District provides Solid Waste Collection for both residential and commercial properties through a contract with a private company (Chetwynd 2012c). There is a regional district landfill in Chetwynd as well, operated by the PRRD (PRRD n.d.).

### Heating and Electricity

BC Hydro provides the District of Chetwynd residents and businesses with electricity, while Terasen Gas provides natural gas to residential, commercial, and industrial customers (InvestBC n.d.-b).

#### 4.3.3.9 *Communications*

Telephone service in the District of Chetwynd is provided by Telus. Internet service is supplied by Telus Internet Services, Persona Communications, and Peace Regional Internet Society (Chetwynd n.d.). There is a range of radio and television providers within the community. The local newspaper is the *Chetwynd Echo* (Chetwynd n.d.).

#### 4.3.3.10 *Transportation*

Chetwynd is located at the intersection of Highway 97 and Highway 29. Highway 97 connects the town west to Prince George and east to Dawson Creek, while Highway 29 provides access south to Tumbler Ridge and north to Hudson Hope. The CN Rail mainline also runs through Chetwynd, which has bulk, container, liquid and multi-commodity capacity (InvestBC n.d.-b). Additional details are provided in Section 4.2.4.

#### 4.3.3.11 *Emergency and Protection Services*

The District of Chetwynd Emergency Plan follows the provincial emergency management model, as well as the principles of the BC Emergency Response Management System (Chetwynd 2012c).

The Chetwynd RCMP detachment consists of 11 police officers. It provides community-based police protection and crime prevention services to the community, as well as to a 100-km-radius service area from the municipal core. They receive on average 3,000 service calls per year (Chetwynd n.d.; O. Tremblay, Pers. Comm., 2013).

The District of Chetwynd has a paid Fire Chief and 30-member volunteer Fire Department. It provides fire suppression services to the district residents within their Fire Protection District, which encompasses 6,500 hectares. The District by written agreement also provides fire suppression services to an 82 km<sup>2</sup> area in the PRRD. It also provides for motor vehicle rescues beyond the district boundaries. The department is well equipped with modern fire-fighting equipment including a pumper truck, a ladder truck, an initial response vehicle, and a rescue vehicle (Chetwynd 2012c, n.d.). They respond to approximately 125 incidents per year (Plate 4.3-7; including forest fires and rescues; L. Sabulsky, Pers. Comm., 2012).

The District of Chetwynd BC Ambulance Service is responsible for emergency transportation of sick and/or injured individuals. The District has 2 ambulance vehicles available to the local residents, and operates out of the same building as the fire department.

### 4.3.4 **City of Fort St. John**

The City of Fort St. John is located along the Alaska Highway (Highway 97), 75 km north of Dawson Creek and 214 km west of Grande Prairie, Alberta. By highway, the city is 478 km northeast of Prince George via Hudson's Hope, and 408 km south of Fort Nelson (Figure 3.1-1). Fort St. John is the largest city in Northeast BC. It is also the airport gateway to the Peace River Region, with daily flights available from Vancouver, Edmonton and Calgary (BritishColumbia.com 2012b).



*Plate 4.3-7. Ladder truck, District of Chetwynd fire department.*

The city was originally established by the North West Company in 1794 as a trading post for the local First Nations and as a supply depot to exploration expeditions into BC. Originally named Rocky Mountain Fort, it became the first non-native settlement in BC. In 1821, the fort was renamed Fort St. John, following the purchase of the North West Company by the Hudson's Bay Company (FSJ 2012b).

In 1913 there were about 30 settlers living in Fort St. John. In 1942, the completion of the Alaska Highway sparked a population boom, with Fort St. John's population rapidly growing from 200 to approximately 6,000. However, the largest population influx occurred in 1951, when high-grade oil was discovered, marking the area's beginning as a major producer of oil and gas (Discover The Peace Country.com 2012; FSJ 2012b). Fort St. John is known as BC's oil and gas capital and has become the regional service centre in northeastern BC (FSJ 2012c). It was incorporated as a city in 1975 (BritishColumbia.com 2012b).

The City of Fort St. John is represented by a Mayor and six Councillors elected at-large every three years. The total operating budget for the District in 2011 was slightly over \$42 million (FSJ 2012a; D. Hunter, Pers. Comm., 2012).

#### *4.3.4.1 Population and Demographics*

The 2011 census reported a total population of 18,609 people in Fort St. John, an increase of 6.9% from 2006. The male population slightly outweighed the female population, with 51.2% of all residents reported to be male (Stats Can 2012k). Fort St. John's population is relatively young compared to the province; the median age in 2011 was 30.6 years, considerably lower than the provincial median of 41.9 years. Nearly 79% of the population was over the age of 15 (Stats Can 2012k, 2012f).

Despite the relative proximity of First Nations communities such as Halfway River, Blueberry River and Doig River, the Aboriginal population of the community is lower relative to other communities in the RSA. According to the 2006 Census, 9.5% of the city's residents identified themselves as Aboriginal, compared to 12% regionally. The presence of visible minorities in Fort St. John is even smaller, with 3.8% of all residents identified as a visible minority, most of which are of Chinese, South Asian, African or Filipino descent (Stats Can 2007j). Unlike other communities in the RSA, the population of Fort St. John has increased consistently since 1996 (see Table 4.3-19). This may be due to its role as a regional service centre, having a more diversified economy than the other communities in the region, and not being as vulnerable to the boom-bust cycles caused by reliance on natural resource industries.

**Table 4.3-19. Population and Demographic Changes, City of Fort St. John 1996 to 2011**

Population and Demographics	1996	2001	2006	2011
Total Population	15,021	16,034	17,402	18,609
Population change from previous Census (%)	6.1%	6.7%	8.4%	6.9%
Males	7,665	8,190	8,975	9,545
Females	7,355	7,845	8,430	9,070
Median Age (years)	29.7	29.6	29.8	30.6
Population over 15 years (%)	74.4%	76.9%	78.3%	78.8%

Source: Stats Can (1997a, 2002e, 2007j, 2012k)

As with other communities in the RSA, Fort St. John has an extensive “shadow population” which utilizes the city's commercial and municipal services in addition to its permanent residents. It is a challenge for the city to obtain the necessary tax revenues to meet the service capacity requirements of the broader population (D. Hunter, Pers. Comm., 2012).

#### 4.3.4.2 Education, Skills, and Training

According to 2006 Census data, of the population over the age of 15, approximately 26.6% reported to have no certified education (Table 4.3-20). Relative to the province, Fort St. John residents are more likely to have not completed high school and less likely to have a university degree, but more likely to obtain post-secondary and college certificates (Stats Can 2007j). While Fort St. John's population had a larger proportion of people with trades training (12.9%) than the Province (10.9%), those with a university degree or diploma (9.4%) is well below the Provincial average

**Table 4.3-20. Maximum Level of Education Attainment as a Percent of Total Population, City of Fort St. John 2006**

Highest Level of Schooling	City of Fort St. John			British Columbia		
	Total	Male	Female	Total	Male	Female
Total population aged 15+	13,515	7,050	6,465	3,394,910	1,649,590	1,745,320
no high school certificate or diploma	26.6%	26.4%	26.9%	19.9%	20.3%	19.5%
high school or postsecondary certificate	30.7%	28.7%	32.9%	27.9%	26.5%	29.2%
trades certificate or diploma	12.9%	19.8%	5.4%	10.9%	14.6%	7.3%
college certificate or diploma	17.2%	14.2%	20.5%	16.7%	14.4%	18.8%
university certificate, below a bachelor	3.0%	1.8%	4.3%	5.4%	4.6%	6.2%
university certificate, diploma or degree	9.4%	9.0%	9.7%	19.3%	19.6%	19.0%

Source: Stats Can (2007j).

The educational achievement among genders in 2006 was reported to be very similar, although trade certificates were notably more common among men. Nearly 20% of the male population have trade certificates, compared to only 5.4% among the female population (see Table 4.3-20).

#### Education Facilities

The city has childcare facilities and five pre-schools available to local residents. Pre-school programs are offered at the Aboriginal Head Start, the Child Development Centre, the Keeginaw Pre-school, the Sleeping Stones Centre and at the Totem Pre-school (FSJ 2010).

Public school services in the city are under the Peace River North School District 60. Fort St. John serves as the administrative centre for School District 60. The district also hosts one of the nine provincial Distance Education schools, which serves the Northeast region and parts of the Northwest Territories (SD 60 n.d.).

The public elementary, middle and secondary schools and their 2011/12 student enrolments in Fort St. John are (SD 60 n.d.):

- Alwin Holland Elementary (300);
- Bert Ambrose Elementary (355);
- Bert Bowes Middle School (500);
- C M Finch Elementary (250);
- Dr. Kearney Middle School (550);
- Duncan Cran Elementary (360);
- Ecole Central Elementary School of the Arts (390);
- Robert Ogilvie Elementary (310); and
- North Peace Secondary (over 1,200).

Other specialized/Alternate Learning services are provided by Northern BC Distance Education, the Energetic Learning Campus, the Key Learning Centre, and the Aboriginal Education Centre (SD 60 n.d.).

#### Post-secondary Education

NLC provides post-secondary education through its campus in Fort St. John. It serves more than 1,800 students each year. In 2007 the college opened its Jim Kassen Industry Training Centre, providing new facilities for a number of trades and apprenticeship programs. The Centre also houses the provincial Oil and Gas Centre of Excellence, designed to develop provincial guidelines for the oil and gas industry training (NLC 2012).

UNBC maintains a campus in Fort St. John. The local campus offers both undergraduate and graduate programs in the areas of Social Work, Business, and Teacher Education. UNBC also offers part-time graduate programs and undergraduate courses sufficient for a General Bachelor of Arts (UNBC n.d.; L. Selby, Pers. Comm., 2012).

Enrolment in academic courses at the university, in recent years, has declined with the increase in industrial activity. Enrolment in training for trades has increased over the same period. Heavy industry has provided funding for programs that would generate a workforce with the skills they require (B. Powers, Pers. Comm., 2012).



#### 4.3.4.3 Employment

##### Employment/Participation Rates

The labour force (aged 15 and above) in Fort St. John totalled 13,510 people with a participation rate of 80.5% in 2006, slightly above the 2001 rate (77.9%) and significantly above the 2006 provincial rate (65.6%- see Table 4.3-21). Men reported higher participation rate than women (88.9% and 71.3% respectively). Within the labour force, 76.6% were employed in 2006. This is a 5.9% increase from the 2001 employment rate, and 15% higher than the 2006 provincial employment rate (61.6%). Given the high availability of employment opportunities, Fort St. John has a large participation of young people in the labour force. School District 60 has estimated that up to 70% of its secondary students had jobs, with 27% of them working more than 20 hours per week (SD 60 n.d.) .

**Table 4.3-21. Labour Force Data for the City of Fort St. John and British Columbia, 2001 to 2006**

Labour Force	City of Fort St. John, 2001			City of Fort St. John, 2006			British Columbia, 2006		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
Total Population 15+	12,325	6,350	5,990	13,510	7,050	6,460	3,394,910	1,649,590	1,745,320
Participation Rate	77.9%	86.5%	68.6%	80.5%	88.9%	71.3%	65.6%	70.7%	60.7%
Employment Rate	70.7%	78.5%	62.4%	76.6%	84.2%	68.2%	61.6%	66.7%	56.9%
Unemployment Rate	9.1%	9.2%	9.1%	4.9%	5.3%	4.2%	6.0%	5.8%	6.3%

Source: Stats Can (2002e, 2007j)

##### Unemployment

Approximately 4.9% of the labour force in Fort St. John was unemployed in 2006, compared to 6% for the province as a whole. Unlike the province, unemployment in Fort St. John was higher among men than among women. The unemployment rate in Fort St. John decreased significantly from 2001, when 9.1% of the residents were unemployed (Stats Can 2002e, 2007j).

#### 4.3.4.4 Incomes and Earnings

Median earnings for Fort St. John residents in 2005 were reported at \$31,975, 24% higher than the provincial median reported at \$25,722. Median earnings for men (\$46,962) were more than double the earnings reported for women (\$20,149; see Table 4.3-22).

**Table 4.3-22. Earnings and Income Data for the City of Fort St. John Population 15 Years and Over, 2005**

Highest Level of Schooling	City of Fort St. John			British Columbia		
	Total	Male	Female	Total	Male	Female
Annual median earnings	\$31,975	\$46,962	\$20,149	\$25,722	\$32,375	\$20,458
Annual full-time median earnings	\$46,345	\$56,464	\$33,976	\$42,230	\$48,070	\$36,739
Earnings as a % of total income	89.2	92.8	80.8	75.1	78.5	69.8
Government transfers as a % of total income	6.1	3.3	12.5	10.7	7.9	15.0

Source: Stats Can (2007j)

Amongst those working full-time, the annual median was approximately \$46,345, which was 9.7% higher than the provincial median estimated at \$42,230. Men working full-time reported 17.5% more earnings than their provincial counterparts, while women with full-time earnings reported 7.5% less earnings than their provincial counterparts (Stats Can 2007j).

On average, earnings comprised over 89% of total income, while government transfers accounted for an additional 6.1% (Table 4.3-22). Fort St. John has the highest proportion of earnings related to income of all the study communities, and the lowest proportion of government transfers. In total, earnings constituted a far larger portion of income in Fort St. John than provincially (75%).

#### 4.3.4.5 Economy and Business Environment

##### Overview

The oil and gas industry is a significant driver of the Fort St. John economy. It is one of the main employers in the city and has stimulated a range of other supporting businesses such as construction, trucking and pipeline operations (FSJ 2012c).

Fort St. John also has strong agricultural and forestry industries. The area comprises more than 16 million hectares of active farmland that produces wheat, barley and grass seeds. The city is also surrounded by 4.5 million hectares of timber supply, and hosts sawmills and wood manufacturing facilities. The local forestry industry directly employs an estimated 600 people and generates \$90 million in revenues per year (FSJ 2012c).

The Fort St. John and District Chamber of Commerce supports area businesses by providing networking opportunities, a collective voice and services for business development. They represent more than 400 businesses in diverse industries, and have one of the largest per capita membership rates in the province (FSJCOC n.d.).

##### Labour Force Statistics

According to the 2006 census data, most Fort St. John residents work in agriculture and other resource-based industries (18.7%), followed by business services (15.9%), retail trade (12.3%) and construction (11.4%- see Table 4.3-23). A variety of other small services made up 17.6% of the city's labour force.

**Table 4.3-23. Industry Significance by Labour Force, City of Fort St. John, 2006**

Industry	City of Fort St. John				BC Total % Distribution
	Total	Male	Female	Total % Distribution	
Total experienced labour force over 15	10,830	6,245	4,585	100.0%	100.0%
Agriculture and other resource-based industries	2,030	1,680	350	18.7%	4.9%
Construction	1,230	1,005	220	11.4%	7.6%
Manufacturing	455	365	90	4.2%	8.6%
Wholesale trade	470	345	125	4.3%	4.2%
Retail trade	1,335	530	800	12.3%	11.4%
Finance and real estate	425	160	265	3.9%	6.2%
Health care and social services	655	70	585	6.0%	9.7%
Educational services	605	205	400	5.6%	7.0%
Business services	1,720	975	740	15.9%	19.9%
Other services	1,905	905	1,005	17.6%	20.6%

Source: Stats Can (2007j).

Fort St. John's labour force economy is fairly diversified. The male population tended to be employed in agriculture and other resource-based industries (26.9%), as well as in construction (16.1%) and business services (15.6%), while the female population was predominantly involved in retail trade (17.4%),

business services (16.1%), and health care and social services (12.8%). The proportion of residents employed in resource-based industries in Fort St. John was far higher than the provincial average (4.9%), whereas the proportion of the workforce in industries such as manufacturing or real estate was lower than the provincial average. Table 4.3-23 summarizes the city's labour force by industry.

The majority of Fort St. John's population was employed in occupations such as trades, transport, and equipment operators (24.2%), sales and services (23.1%), and business, finance and administration (16.1%), reflecting the city role as a logistical and supply centre for the PRRD. The men were overwhelmingly employed in trades, transport, and equipment operations (39.7%), with sales and services (13.9%) next in frequency. Women were mainly employed in sales and services (35.7%), and business, finance and administration (31.2%). The total employment by occupation is summarized in Table 4.3-24.

**Table 4.3-24. Experienced Labour Force by Occupation, City of Fort St. John, 2006**

Occupation	City of Fort St. John				BC
	Total	Male	Female	Total % Distribution	Total % Distribution
Total experienced labour force over 15	10,830	6,245	4,580	100%	100%
Management	920	605	315	8.5%	10.5%
Business, finance, administration.	1,745	310	1,430	16.1%	17.1%
Natural sciences	695	555	150	6.4%	6.3%
Health occupations	360	70	290	3.3%	5.5%
Social science/education/government/religion	650	175	470	6.0%	8.1%
Art, culture, recreation, sport	120	50	70	1.1%	3.5%
Sales and service	2,505	870	1,635	23.1%	25.3%
Trades, transport, and equipment operators	2,620	2,480	145	24.2%	15.5%
Primary industry	750	710	40	6.9%	3.9%
Processing, manufacturing and utilities	455	415	40	4.2%	4.2%

Source: Stats Can (2007j).

Government related institutions are the leading local employers, including Northern Health (746 employees), School District 60 (548 employees) and the Government of BC (350 employees). Other major employers are national retailers, such as Walmart (150) and Safeway (150). The Peace Valley oriented strand board mill, as well as Spectra Energy and Canfor, are also important employers (InvestBC n.d.-a). The City of Fort St. John employs 150 people alone (D. Hunter, Pers. Comm., 2012).

#### Businesses

The city of Fort St. John hosts a wide range of businesses and services. It is the largest city and the regional service centre in northeastern BC, servicing more than 64,000 people in the area (FSJ 2012c).

Like all communities in the Peace Region, employers in the service industry are challenged by finding staff, since those staff can earn significantly higher wages working for heavy industry. As a result, businesses are recruiting immigrant labour from other countries and, if required, reducing the level of service delivery (L. Selby, Pers. Comm., 2012).

#### 4.3.4.6 Social and Health

The NHA is responsible for delivering health and social services to Fort St. John residents. The city is located within the Northeast HSDA and Peace River North LHA 60 (BC Stats 2012h). Fort St. John is the largest community within LHA 60, accounting for almost 55% of the total LHA population (BC Stats 2012i).

There are two main medical facilities in Fort St. John: the newly constructed Fort St. John Hospital & Residential Care Centre (Peace Villa), and the Fort St. John Health Unit. Fort St. John Hospital serves as the primary medical facility in the city and the PRRD. It provides medical procedures, surgeries, emergency treatment, routine laboratory test and other medical services to local residents (HealthLinkBC 2012b).

Fort St. John residents also have access to three medical clinics: ABC Medical Clinic, North Peace Medical Clinic, and The Fort St. John Medical Clinic. There are also three vision care facilities and five dental clinics in the community (FSJ 2012b). Overall, Fort St. John is served by 26 physicians and 11 dentists (InvestBC n.d.-a).

Fort St. John provides good recreation facilities, including the North Peace Leisure Pool, the North Peace arena, the Skateboard Park, the Fort St. John curling rink, and the recently constructed Pomeroy Sport Centre (FSJ 2012c). The City also offers many outdoor facilities, including a trail system, parks and many sport fields, golf courses, hunting areas, bird watching locations, camping facilities, snowmobile trails, and boating and fishing locations, skiing, cross country skiing, and bike trails (FSJ 2012b).

#### Issues and Trends

There is a shortage of nurses in Fort St. John. Many nurses that have retired have been called back due to lack of available staff (B. Powers, Pers. Comm., 2012). The Child Development Centre in Fort St. John is overwhelmed by the current demand and does not have the capacity to meet it. Indoor play space for children is also limited- this becomes problematic in the winter when it is too cold to play outside (D. Hunter, Pers. Comm., 2012).

#### *4.3.4.7 Infrastructure*

Fort St. John's OCP (Schedule A to Bylaw No. 2076, 2011) is the overarching guide for all zoning and development in the city. It is a 25-year vision for the community, setting out policies to "guide the city towards a prosperous future". Among the plan's goals are to create a community that promotes affordable and adequate housing for all residents; an accessible and inclusive community; and a built environment that provides a safe and attractive community for all seasons (FSJ 2011).

#### Housing

In 2011, the city of Fort St. John reported 8,238 total private dwellings, with 7,480 of these being occupied by usual residents. This was an increase of 15.5% over the 7,129 dwellings reported in 2006. Out of these, 49.8% were single detached houses, 17.7% were apartments and the rest were semi-detached structures, row houses and other dwellings. (Stats Can 2007j, 2012k).

The City has estimated that Fort St. John will grow between 3 and 4% annually for the next 10 years, resulting in another 8,000 to 10,000 residents by 2022. The city has adequate land resources to support this growth (FSJ 2011).

In 2011, the OCP stated that the median housing price in Fort St. John was approximately \$285,000. Over 62% of the homes in Fort St. John were built before 1980, and over 30% of all homes were reported to be in need of either minor or major repairs. Between 3,000 and 4,000 new residential units are predicted to be needed within the next 25 years (FSJ 2011).

According to the 2011 OCP, 1 in 5 residents of Fort St. John are in need of some form of affordable housing (FSJ 2011). There is already a substantial pressure on housing in the city, and the pressure will only increase as development increases (D. Hunter, Pers. Comm., 2012). Inflation in the price of housing has affected Fort St. John (D. Hunter, Pers. Comm., 2012; B. Powers, Pers. Comm., 2012).

#### 4.3.4.8 Utilities

##### Water

The City of Fort St. John resources its water supply from five wells on the shores of Peace River. The water is pumped out of the river valley to a treatment plant before entering the distribution system. It provides water for various uses including residential, commercial, industrial and fire protection. In addition to the main supply, there are two reservoirs with pump stations in the city (InvestBC n.d.-a).

While the city's water and sewer lines still have capacity, that capacity is rapidly decreasing, and the lines themselves are aging. The city will need to replace aging infrastructure at the same time they need to retain capacity. They have recently undertaken efforts to encourage water conservation by the community, to the point where although there has been a large increase in population, water consumption is at the same volume as it was five years ago (D. Hunter, Pers. Comm., 2012).

##### Sewage and Garbage

The City of Fort St. John has two separate lagoon systems for sewage treatment. The South Lagoons discharge treated waste water into the Peace River, while the North Lagoons discharge waste water seasonally to the Beatton River (InvestBC n.d.-a).

Average daily demand on the city's sewers is 5,664 cubic metres per day, with peak demand at 15,000 cubic metres per day. The rated capacity of Fort St. John's sewage system is 15,000 cubic metres per day (InvestBC n.d.-a). The sewage system serves all existing developed properties within the city boundaries. The city also accepts trucked-in sewage from rural residents and industry at a designated pumping station near the South Lagoons (Urban Systems 2004).

Residential garbage is collected weekly and is transported to the Regional Landfill located west of the city. The city predicts there is 25-30 years of capacity left at their landfill site (InvestBC n.d.-a).

##### Heating and Electricity

BC Hydro provides Fort St. John residents and businesses with electricity. Natural gas is provided by Pacific Northern Gas (InvestBC n.d.-a).

#### 4.3.4.9 Communications

Telus is the primary service provider for the City of Fort St. John. Additional telecommunications providers are Shaw, Bell and Rogers. There are multiple providers of cellular communications, including Bell Mobility, Telus Custom Cellular, Petron Communications (Telus authorized dealer) and other small retailers (FSJ 2012b; InvestBC n.d.-a). Internet services are provided in Fort St. John by Telus, PRIS, Internet Guys and Shaw Cable (FSJ 2010).

The city is serviced by four FM radio stations and three regional newspapers in addition to national daily newspapers (FSJ 2010).

#### 4.3.4.10 *Transportation*

Fort St. John is located along the Alaska Highway (Highway 97), which provides access north to Fort Nelson and south to Dawson Creek. Highway 29 is within 5 km from the community providing access to Hudson's Hope and Chetwynd to the south (NPEDC 2012a).

Fort St. John Regional Airport is located 7 km east of the community and is an important transportation hub for the city and the region (YXJ n.d.). The airport has two runways (2,057m and 2,118m-InvestBC n.d.-a) and 6 helicopter pads (FSJ n.d.).

Greyhound provides daily bus service from all of the major cities (FSJ 2012c). CN Rail provides regularly scheduled cargo services, offering access to the Pacific Rim and the Eastern Canadian markets (NPEDC 2012a). The switching yard is within city limits, and the railway has cargo-bulk, container, liquid, and multi-commodities capability (InvestBC n.d.-a).

Further details on road, air and rail transportation are provided in Section 4.2.4.

#### 4.3.4.11 *Emergency and Protection Services*

The City of Fort St. John passed the Emergency Measures Bylaw #1751 that provides for the establishment and management of an emergency response plan and trained emergency operations team. It aligns with the provincial Emergency Response Management System (FSJ 2012c).

The RCMP Fort St. John Detachment serves the municipalities of Fort St. John and Taylor. It is responsible for the area from the South Peace Stock Farms, north to the Sikanni Chief River, west to the Halfway River and east to the Alberta boundary. The detachment staffs 60 full-time employees, three auxiliary constables, a citizen's patrol and two police-based victim services workers (FSJ 2012c).

The Fort St. John Fire Department provides fire suppression, rescue services, first responder medical calls, building inspections and prevention and education programs to a 27-square-mile area around Fort St. John and five miles north, south and east of the city. The department has 19 full-time employees and 13 volunteer firefighters (FSJ 2012c).

BC Ambulance Service has three ambulances dedicated to serve Fort St. John city and surrounding communities. In addition, helicopters and a fixed winged aircraft are available for medical evacuations. The ambulance crew includes one full-time Paramedic Unit Chief and 22 part-time paramedics (FSJ 2012c).

### 4.3.5 **West Moberly Lake 168A (West Moberly First Nations)**

The WMFN community is located on one 2,033 ha reserve, West Moberly Lake 168A, at the west end of Moberly Lake, approximately 90 km southwest of Fort St. John and 30 km north of Chetwynd (Figure 3.1-1; AANDC 2012). WMFN, along with Halfway River First Nation, was formerly part of the Hudson Hope Band which split in 1977. They are a signatory to Treaty 8 and are affiliated with the Treaty 8 Tribal Association (T8TA 2005-2012b).

WMFN is governed by a Chief and four Councillors (one from each of the key family groups), who are elected according to the custom electoral system (AANDC 2012). The Chief is elected by the entire community, while each family determines their own method of selecting their councilor. The Chief does not have a vote in council (EPCOR 2009).

#### 4.3.5.1 Population and Demographics

As at September 2012, the WMFN had a registered population of 247 people - 88 persons living on-reserve and 159 persons off-reserve (AANDC 2012). By comparison, the 2011 Census reported an on-reserve population of 95, an 86.3% increase from 2006 when only 51 people lived on the reserve (Stats Can 2012j). This indicates a reversal from population declines noted in the 2001 and 2006 Census data (Table 4.3-25). The reversal has apparently been attributed to recent housing price increases in the nearby community of Chetwynd (PRCI 2010), which has forced many members of WMFN to return to the reserve, where housing is more affordable. WMFN's population had an equal amount of male and female residents in 2006<sup>7</sup>. The median age for the community in that year was estimated at 22.5 years, a notable 18.3 years younger than the provincial median, and 5.6 years younger than the Aboriginal median for the Province (Stats Can 2007e, 2012j).

**Table 4.3-25. On-Reserve Population and Demographic Changes, West Moberly Lake 168A-2001 to 2011**

Population and Demographics	2001	2006	2011
Total Population	52	51	95
Population change from previous Census (%)	-24.6%	-1.9%	86.3%
Males	25	25	n/a
Females	25	25	n/a
Median Age (yrs)	16.8	22.5	n/a
Population over 15 years (%)	54.5%	70.0%	n/a

Source: Stats Can (2002g, 2007e, 2012j)

Note: n/a = data not available.

#### 4.3.5.2 Education, Skills, and Training<sup>8</sup>

Educational attainment among the WMFN generally was low compared to the Province as a whole. Of the population over the age of 15 years, approximately 57.1% reported to have no certified education in 2006, while only 28.5% have completed high school. There were no residents having trade certificates, college diplomas, or any kind of university certificate, diploma or degree. A significantly higher proportion of WMFN residents have not completed high school relative to the provincial median (19.9%), and the provincial Aboriginal median (39%; Stats Can 2007e, 2007a).

The low educational profile of the community is in part attributed to the availability of high paying jobs in the local and regional resource industries, many of which do not require high school completion (PRCI 2010).

#### Education Facilities

There is no school in the community and students must commute to Moberly Lake or Chetwynd for classes (WCC 2007).

<sup>7</sup> Statistics Canada has suppressed most demographic data on West Moberly Lake 168A in 2011 due to the small size of the community.

<sup>8</sup> Because the First Nations study communities in this study exhibit low populations, data from Statistics Canada is commonly suppressed, and rounding errors are higher than in data from larger communities. As a result, tables displaying Statistics Canada census data for these communities were omitted.

#### 4.3.5.3 Employment

##### Employment/Participation Rates

The community's labour force aged 15 and above totalled 35 people in 2006. The participation rate of the community increased from 50% in 2001 to 71.4% in 2006. This was 8.8% above the 2006 provincial rate of 65.6%. Men in the community reported the same participation rates as women (Stats Can 2002g, 2007e). The high participation rate is likely due to the availability of jobs in the vicinity. The employment rate of West Moberly residents was 57.1%, compared to 55.3% of Aboriginal people provincially (Stats Can 2007a).

##### Unemployment

In 2005, the unemployment rate for residents of the WMFN was estimated to be 2%. WMFN representatives have noted that this figure can change seasonally as other factors change (e.g., availability of jobs in the vicinity of the community; WCC 2007). However, PRCI (2010) indicated that only 5% of the working population on the reserve was unemployed in 2010, which is still low.

Census data from 2006 states that there was no unemployment on the West Moberly reserve that year, though it also states that the employment rate in the community was only 57.1% (Stats Can 2007e). Comparatively, 15% of Aboriginal people across the Province were unemployed that year (Stats Can 2007a).

Training and job bank services are provided by the North East Native Advancing Society in Fort St. John (PRCI 2010), as well as the Tansi Friendship Centre Society, located in Chetwynd (Plate 4.3-8; NECS 2004).



Plate 4.3-8. TANSI Friendship Centre Society, District of Chetwynd.

#### 4.3.5.4 Income and Earnings

Due to the small size of the West Moberly community, data was suppressed by Stats Can on income and earnings for 2005, the most recent census data on income and earnings.



#### 4.3.5.5 *Economy and Business Environment*

##### Overview

The WMFN relies on logging, an industrial contracting business, and trapping for employment opportunities and for generating revenues to the community (T8TA 2005-2012b). Past economic activity in the areas has been primarily in the forestry, retail trade, mining and oil and gas sectors. Agriculture and tourism are also important to the WMFN (PRCI 2010). The First Nation is a signee with the District of Chetwynd and the SFN in the Chetwynd Community Forest (Finavera 2011a; BC MFLNRO 2012; see also Section 4.3.3.5).

WMFN has formed a partnership to plan the development of the 'Pine Pass Mountain Resort', a year-round tourism destination resort in northeast BC located along Highway 97 on Mount Lavitah, in the heart of the Rocky Mountains. (NDIT 2011). This facility has yet to be developed.

##### Labour Force Statistics

One-third of the West Moberly reserve labour force in 2006 worked in each of agriculture and other resource-based industries, health care and social services, and “other services” (Stats Can 2007e).

One-third of the working population in 2006 was employed in each of occupations related to management; social science, education, government and religion; and processing, manufacturing and utilities.

##### Businesses

Dunne-Za Ventures LP, a WMFN company, provides many services to the oil and gas, forestry and mining sectors. Core service areas include forestry, earthworks, transportation, road upgrades (e.g., aggregate crushing), and clearing. In 2008, Dunne-Za Ventures LP won the Innovation at Work Award for their exceptional environmental standards (PRCI 2010; Dunne-za Ventures LP 2012).

Dunne-Za contracts work out to other band-owned and operated companies. These include: Sipugahma, Daneli Contracting, Stone Creek Environmental Services, Dokkie and Sons Contracting, Aurora, Xpert Safety and Slashing Ent., Krosstec Controls, GBA Oilfield Construction, and A.J. First Aid Services. WMFN also has a joint venture agreement with the Black Diamond Group Limited, which provides remote accommodations and energy services for large resource development projects (MarketWired 2010; PRCI 2010).

WMFN and Tarpon Energy Services Ltd. have established a joint venture, Tarpon WestMo Services Ltd. It will supply electrical and instrumentation services, controls systems and steel building solutions to the energy sector in northeastern British Columbia. As part of the joint-venture agreement, Tarpon has engaged Impact Society, a non-profit organization, to develop a customized community enrichment plan for WMFN. The plan focuses on helping community members, especially youth, understand and develop the strengths, skills and abilities necessary in order to improve individual livelihoods as well as community well-being (Canada Newswire 2012b).

More recently, WMFN has constructed the Dunne-za Lodge on the north shore of Moberly Lake complimented with guest cabins for rental accommodations (Finavera 2011a).

#### 4.3.5.6 *Social and Health*

Chetwynd General Hospital is the closest hospital to the West Moberly reserve. The on-reserve health centre focuses on educational and prevention programs aimed at all age groups. Services that are provided at the on-reserve health centre include: infant immunizations (on a bi-monthly basis), a mental health counselor (on a weekly basis), a pre-natal nutrition program, a drug and alcohol prevention program, massage therapy, and an adult in-home support program. The community would like to receive further funding for mental health so that a counselor could be accessible more than once a week. A Child and Family Services Program is under development with the provincial government (PRCI 2010).

There is no independent living home for elders on the reserve. Currently, elders that require more intensive medical care are placed in homes off-reserve (PRCI 2010). Residents requiring more advanced medical treatment or dental care must travel to Chetwynd to procure these services.

The Dakii Yadze Centre provides day care for children up to five years old. It received the BC Government's Child Care Award of Excellence in 2012, in recognition for its contribution to the community. With this success, the Centre is looking to expand back into after-school programming (EnergeticCity.ca 2012).

Current recreational opportunities include a swim club, a karate club, guitar nights, men's hockey, and summer cultural camps for youth and Elders (WCC 2007).

#### 4.3.5.7 *Infrastructure*

##### Housing

There were a total of 47 private dwellings on the West Moberly reserve in 2011, and 36 of them were occupied by usual residents. Housing numbers on reserve have more than doubled since 2006 when only 22 total dwellings were reported. Data was suppressed by Stats Can on the types of housing stock on reserve in 2011. In 2006, the year the most recent data is available, 75% were single-detached structures, and all of the homes were owned rather than rented. All homes in 2006 were built within the last 20 years, and none of the dwellings, according to Stats Can, required major repair (Stats Can 2007e, 2012j).

The WMFN Housing Department provides housing to on-reserve members, oversees rental units and construction of new homes (PRCI 2010). WMFN received \$210,642 from the Canadian Mortgage and Housing Corporation in the 2010/2011 fiscal year to provide non-profit on-reserve housing (AANDC 2012).

An increase in housing costs in Chetwynd has forced some people to return to the reserve to share homes, in some cases leading to overcrowding (WCC 2007). A doubling of the housing stock since 2006, however, has partly alleviated overcrowding in the community.

#### 4.3.5.8 *Utilities*

##### Water/Sewage/Garbage

The West Moberly reserve provides potable treated water for the community (PRCI 2010). There are two pumping stations in the community to move waste water and sewage to the treatment plant (AANDC 2009-2011). Sewage is treated in a lagoon system that discharges into a wetland (outside the community but on the reserve; PRCI 2010).

A garbage facility is also located in the community (Aboriginal Canada Portal 2004b). There is a waste transfer station at Moberly Lake, however it is frequently over-capacity, resulting in back-ups (Interraplan Inc. 2004).

#### Heating and Electricity

All homes on the West Moberly reserve have electric heat with wood heaters. A few of the houses were known to have propane heating units (Jade Desjarlais, Pers. Comm., in WCC 2005). Hydro utilities on reserve provide electricity to the community (Aboriginal Canada Portal 2004b).

##### *4.3.5.9 Communications*

The West Moberly reserve has telephone service at their administration office. As of 2005, however, many of the houses in the community did not have telephone service, and there was a waiting list for servicing new homes (Jade Desjarlais, Pers. Comm., in WCC 2005).

According to the connectivity profile for WMFN in 2003, community residents had access to high-speed dial-in internet service. Less than 25% of households subscribed to the internet. Satellite television was also available on-reserve, and between 76 and 100% of households had satellite TV subscriptions (Aboriginal Canada Portal 2004b).

In April of 2005, the province of BC and Telus entered into a Connecting Communities Agreement to bring high-speed internet access to 119 rural communities. In July 2006, 17 organizations were awarded service provision status, including WMFN through its Indignet Corporation, which serves all of the Moberly Lake area (BC and Telus 2006).

##### *4.3.5.10 Transportation*

The West Moberly community is situated just off of Highway 29 between Chetwynd and Hudson's Hope. All of the roads located on the West Moberly reserve are gravel. In the winter the conditions are poor. The greatest transportation concern within the community is the amount of time it takes ambulance services to reach the reserve (Darren Robertson, Pers. Comm., in WCC 2005). It takes approximately 30 minutes for an ambulance in Chetwynd to travel to the reserve (EPCOR 2009).

##### *4.3.5.11 Emergency and Protection Services*

A co-operative on-reserve policing program has been established with the Chetwynd RCMP which has resulted in an increased presence of police on the reserve (PRCI 2010).

West Moberly is in the Chetwynd ambulance area and the Moberly Lake First Services area. Fire protection services are provided through the Moberly Lake Volunteer Fire Department and the PRRD (PRCI 2010).

#### **4.3.6 East Moberly Lake 169 (Saulteau First Nations)**

The SFN community is located in the northern foothills of the Rocky Mountains, along the east end of Moberly Lake and near the Peace River Plateau, approximately 100 km southwest of Fort St. John and 25km north of Chetwynd, along Highway 29 (Figure 3.1-1). SFN is situated on one reserve, East Moberly Lake 169, with 3,025.8 hectares of land base.

In the 1870s, following their leader's vision, the Saulteau (Anishnaubemowin) people migrated westward from Manitoba. They settled at Moberly Lake and intermarried with the people who were already living in the area- the Nehiyawewin (Cree) and Dane-Zaa (Beaver) people. SFN is a signatory to Treaty 8 and is affiliated with the Treaty 8 Tribal Association (T8TA 2005-2012a).

The SFN election system is by custom and is based on traditional Saulteau Chief and Headmen governance. The band has a Chief and four Councillors, each of whom represents one of the five founding SFN families. Each family nominates a leader who becomes a Councillor, and then the general membership elects a Chief from among these five family heads. Elections are held every three years (Finavera 2011a).

#### 4.3.6.1 Population and Demographics

The SFN population has fluctuated over the last decade. According to the 2011 Census, the population of East Moberly Lake 169 totalled 324, having increased 17.8% from 2006, but still below the population reported in 2001 (Table 4.3-26). The community population was slightly male-dominant in 2011, with 52.3% of all residents reported to be male. The median age for the community was estimated at 29.7 years, a notable 12.2 years younger than the provincial median in 2011 (Stats Can 2007c, 2012e, 2012a). The population over the age of 15 has increased by nearly 12 percentage points between 2001 and 2011; the reason for this trend, however, is unclear.

**Table 4.3-26. On-reserve Population and Demographic Changes, East Moberly Lake 169, 2001 to 2011**

Population and Demographics	2001	2006	2011
Total Population	330	275	324
Population change from previous Census (%)	84.4%	-16.7%	17.8%
Males	180	140	170
Females	145	130	155
Median Age (yrs)	23.0	27.6	29.7
Population over 15 years (%)	62.1%	72.7%	73.8%

Source: Stats Can (2002d, 2007c, 2012e)

According to the last available data (as of January 2010), the SFN had a total registered population of 877 people (MARR n.d.-b). This is in contrast to other data which states that in 2006, the total registered population of SFN was approximately 1,100 (PRCI 2010). AANDC reported similar population numbers in 2008, when there were 1,153 total registered SFN members, with 275 people living on reserve, and 878 people living off-reserve (TMW 2009).

#### 4.3.6.2 Education, Skills, and Training

Recent data on education, skills and training are unavailable. Data on education, skills and training for East Moberly Lake 169 was suppressed by Stats Can in 2006.

##### Education Facilities

There are no elementary or secondary school facilities in the community and students must commute to Moberly Lake or Chetwynd to attend classes (WCC 2007).

Educational Services run by the community include the Muskoti Learning Center and a Kindergarten Program (Cree-ative Wonders Head Start Program). Muskoti Learning Center aims to assist adult band members in upgrading their education to receive a General Education Degree (GED).

The two barriers with this program are retention rates and funding. Retention rates for the program are low as community members cannot afford to study full-time and thus they leave the program for employment reasons. In 2007, (WCC 2007; MLC n.d.).

The Muskoti Learning Centre also offers tutoring for both elementary and secondary school students, as well as a computer lab and computer training. They also have a speech and language pathologist visit from Fort St. John twice a month to work with the children in their Headstart Program (SFN n.d.).

#### 4.3.6.3 *Employment*

##### Employment/Participation Rates

Data on employment for the community was suppressed in 2006. The most recent data from 2001 shows that the community's labour force participation rate was 57.1%, 8.1% below the 2001 provincial rate. Men in the community reported a 6.9% higher participation rate than women (Stats Can 2002d). The employment rate of the East Moberly community was 33.3% in 2001, compared to 59.6% provincially.

##### Unemployment

Data on unemployment for the community was suppressed by Statistics Canada in 2006. In 2001, the unemployment rate for residents of the East Moberly Reserve was 41.7% (Stats Can 2002d). This, however, was prior to the economic boom still underway in the RSA.

The North East Native Advancing Society in Fort St. John, British Columbia provides training opportunities for employment to members of SFN among others (PRCI 2010). The Tansi Friendship Centre Society, located in Chetwynd, provides a job bank service as well as Employment Search Assistance (NECS 2004).

#### 4.3.6.4 *Income and Earnings*

In 2000, the median household income on the East Moberly reserve was \$30,059 compared to \$46,802 for British Columbia as a whole (Stats Can 2002d). Data from 2005 was suppressed by Stats Can.

#### 4.3.6.5 *Economy and Business Environment*

##### Overview

The main economic inputs to the SFN community are from a cattle ranch and farm, silviculture, gravel extraction and sales (T8TA 2005-2012a), and mining contracting. Agriculture and tourism are important to the SFN. The non-wage economy, which consists of activities such as trapping, hunting and fishing are also key, both economically and culturally (PRCI 2010). Forestry, construction as well as heavy industrial support and supply have also grown in importance in recent years (4Evergreen Resources LP 2013).

SFN members rely heavily on mining seismic work. When seismic projects are abundant, members do not have difficulty finding a job. However, the community noted a concern about its dependence on seismic work as it provides limited skill development and only seasonal or cyclical employment (WCC 2007).

The SFN government has recognized a need for diversification, cooperation and economic development for SFN band members. The community has been expanding and diversifying employment opportunities into areas such as mining, reclamation, and oil and gas wells. The core competencies of the community include forestry operations and environmental monitoring (WCC 2007).

Over the past several decades, SFN has entered into a number of benefit-sharing agreements with industry and governments interested in doing business in SFN area - primarily in resource extraction. These arrangements provide revenue to the First Nations, as well as some training and employment opportunities for members (Finavera 2011a).

SFN continues to place economic, cultural and social importance on the non-wage economy, and every summer, hunting, trapping and gathering camps are established by the community. Many SFN people stay at these camps to engage in traditional activities. Youth learn Saulteau culture and language, and how to process meat, berries and medicines (Finavera 2011a).

#### Labour Force Statistics

Labour data on the East Moberly reserve was suppressed in 2006. The most recent data from 2001 shows that the East Moberly reserve labour force worked primarily in agriculture and other resource-based industries (29.1%), and “other services” (25%) such as band administration. (Stats Can 2002d).

Sales and service occupations, as well as occupations unique to primary industry, each employed 25% of the labour force in 2001, followed by trades, transport and equipment operators and related occupations (16.6%). Men made up the entirety of the primary industry as well as trades and transport labour force, while only women worked in business, finance and administration occupations; social science, education, government service and religion occupations; and occupations unique to processing, manufacturing and utilities (Stats Can 2002d).

#### Businesses

The SFN have several contractors in the community. As a Nation, they develop joint ventures to pursue contracting opportunities, including Three Nations Ventures (a log and lumber brokerage) and Six Nations Ventures. In 2005, the community established 4Evergreen Resources Inc. to provide communal benefit from contracts. As at 2007, it had delivered \$9.4 million in seismic work (WCC 2007).

4Evergreen Resources has since expanded into a number of different sectors, performing logging, road construction, civil works construction, site maintenance, drill support, and site clearing. The total value of contracts held by the company from 2010 to 2013 is approximately \$25 million (4Evergreen Resources LP 2013).

The SFN have also had contracts in the past for supplying a water truck and for aggregate crushing for mines in the area (PRCI 2010).

#### *4.3.6.6 Social and Health*

Chetwynd General Hospital is the closest hospital to the East Moberly reserve. Health services provided within the community include home support services, drug and alcohol counseling, oral health, a health nurse that provides immunizations and pre-natal care, and a psychologist who comes to the community once a month (PRCI 2010). Residents requiring more advance medical treatment or dental care must travel to Chetwynd to procure these services.

There is also a daycare and a teen centre in the community (T8TA 2005-2012a). A family support worker within the community administers community kitchens, events at the youth centre, and workshops for youth and parents. There is also a parent’s group and women’s group in the community (SFN n.d.).

There is a gym located in the community and volleyball and hockey games are often organized. A recreation coordinator also organizes youth swimming in Chetwynd and winter ski trips (PRCI 2010).

The SFN have created a community garden which also develops native plant stocks for future land reclamation projects. The goal is to bring healthy industry to the community while following the traditional practice of land stewardship (SFN n.d.).

#### 4.3.6.7 *Infrastructure*

##### Housing

There were a total of 110 private dwellings on the East Moberly reserve in 2011, and 103 of them were occupied by usual residents, resulting in a 7% vacancy. The number of dwellings increased by 7.8% over the 102 dwellings reported in 2006. Of these, 81% were single-detached houses, 9.5% were “movable dwellings” (mobile homes, etc.), 4.7% were row houses, and 4.7% were “other dwellings”. There was an average of 3.1 people per household, notably higher than the provincial median for 2011 (2.5- Stats Can 2007c; Stats Can 2012e). An increase in housing costs in Chetwynd has forced some people to return to the reserve to share homes. In some cases, this has led to overcrowding (WCC 2007). The SFN Housing and Capital Department provides housing to on-reserve members, oversees rental units and construction of new homes. (SFN n.d.).

In 2005 it was reported that only 20% of the houses on the East Moberly Reserve were in good condition, the remainder being in fair condition and in need of renovations (WCC 2007). More recent data was unavailable to determine whether housing quality has improved since then.

#### 4.3.6.8 *Utilities*

##### Water/Sewage/Garbage

SFN has its own water supply and individual septic systems built to varying standards, however community members have observed a continuous decline in the quality of water on Moberly Lake from shoreline development (failing septic systems) all along the Moberly Lake shoreline (Interraplan Inc. 2004).

In 2005, it was reported that all of the homes had potable running water, but the system did not provide an adequate supply to all of the houses. It was estimated that approximately 40% of the homes had sewage back-up on a regular basis (WCC 2007).

A garbage facility is also located in the community (Aboriginal Canada Portal 2004a). There is a waste transfer station at Moberly Lake, however this is often over capacity (Interraplan Inc. 2004).

##### Heating and Electricity

Hydro utilities on reserve provide electricity to the community (Aboriginal Canada Portal 2004a). A heat utility is also present on reserve, however no data was available at the time of writing regarding the type of heating used.

#### 4.3.6.9 *Communications*

According to the connectivity profile for SFN in 2003, community residents had access to high-speed dial-in internet service. Less than 25% of households subscribed to the internet. Satellite television was also available on-reserve, and between 51% and 75% of households had satellite TV subscriptions (Aboriginal Canada Portal 2004a).

#### 4.3.6.10 *Transportation*

The East Moberly community is located just off of Highway 29 between Chetwynd and Hudson’s Hope. All of the roads located on the East Moberly reserve are gravel. The school buses require a certain level of maintenance on the roads, which is costly to the community and difficult for them to maintain. The roads are often slippery in the winter and the school buses have skidded off the road in the past (PRCI 2010).

#### 4.3.6.11 Emergency and Protection Services

Police services are provided by the Chetwynd detachment of the RCMP. The East Moberly reserve is in the Chetwynd ambulance area and the Moberly Lake First Services area. Fire protection services are provided through the Moberly Lake Volunteer Fire Department and the PRRD (PRCI 2010).

#### 4.3.7 McLeod Lake IR 1 (McLeod Lake Indian Band)

The MLIB community is located on Highway 97, approximately 140 km north of Prince George (Figure 3.1-1). MLIB is part of the Tsek'ehne ethno-linguistic group situated in the Rocky Mountain Trench (MLIB 2012). They are a recent signatory to Treaty 8, having signed the Treaty 8 Adhesion and Settlement Agreement with Canada and BC in March 2000. Under this agreement the Band received 19,810 hectares of Crown Land in addition to their already existing reserves, as well as other benefits (MARR n.d.-a). They are not affiliated with the Treaty 8 Tribal Association.

MLIB now retain 21 reserves for their use and benefit; however the main community is still situated on McLeod Lake IR 1 (815.2 ha). This reserve is located on Highway 97, adjacent to the non-Aboriginal unincorporated Village of McLeod Lake (MLIB 2012) approximately 129 km west of the Project site.

MLIB is governed by a Chief and six Councilors (two on-reserve, two off-reserve, an elder Councilor and a youth Councilor), who are elected every 3 years (MLIB 2012). In 2004, the Band presented a Statement of Intent (SOI) to Canada and BC to negotiate a self-government agreement on its Indian reserve lands. The SOI was accepted and negotiations are under way; currently the three parties have completed two stages out of the six stages required (MARR n.d.-a).

##### 4.3.7.1 Population and Demographics

Population figures have fluctuated over the last ten years. The 2011 Census reported the total population of McLeod Lake IR 1 to be 73, a decrease of 22.3% from 94 people in 2006, but 4.2% higher than the population in 2001 (Table 4.3-27). Only 46% of the community was male, which was slightly lower than the provincial median for that year. The median age for the community was estimated at 40.8 years, the oldest of all three Aboriginal study communities, being only 1.1 years younger than the provincial median (Stats Can 2012h, 2012g). The population over the age of 15 has increased by nearly 17 percentage points between 2001 and 2011, and the median age of the population has increased by over 9 years in the same time period; the reason for this trend, however, is unclear.

**Table 4.3-27. Population and Demographic Changes, McLeod Lake IR 1, 2001 to 2011**

Population and Demographics	2001	2006	2011
Total Population	70	94	73
Population change from previous Census (%)	6.1%	34.3%	-22.3%
Males	35	50	35
Females	35	40	40
Median Age (yrs)	31.5	33.0	40.8
Population over 15 years (%)	71.4%	83.3%	88.1%

Source: Stats Can (2002f, 2007d, 2012h)

MLIB estimates that their total registered membership is 500, with approximately 100 members living in McLeod Lake (on and off-reserve), and another 150 members living in Mackenzie, Chetwynd and Prince George (MLIB 2012), the remainder living in other communities in British Columbia and elsewhere. AANDC does not provide data on the total registered population of the MLIB.



#### 4.3.7.2 *Education, Skills, and Training*

Educational attainment among the MLIB generally is low compared to the Province as a whole. Of the population in 2006 over the age of 15 years, approximately 60% reported having no certified education, another 20% have completed high school, and 20% had a college certificate or diploma. None of the residents reported having a trade certificate, or any kind of university certificate, diploma or degree. High school incompleteness rates were three times higher than the province as a whole (19.9%) and more than 20 percentage points higher than the provincial Aboriginal median (39%) that year (Stats Can 2007d).

As with WMFN, the gap in education relative to the province is in part attributed to the availability of high paying jobs in the local and regional resource industries, many of which do not require high school completion

#### Education Facilities

There are no school facilities within the community. Students attend Morfee Elementary and Mackenzie Secondary schools in Mackenzie, approximately 49 km north of the community. The Education Department of the MLIB administration is responsible for the oversight of public school education, including the negotiation of tuition agreements with the local School District; financial assistance for post-secondary and technical students; and adult training. Funding is provided by AANDC and MLIB (MLIB 2012).

#### 4.3.7.3 *Employment*

##### Employment/Participation Rates

The labour force aged 15 and above totalled 70 people in 2006. The participation rate in McLeod Lake IR 1 increased from 63.6% in 2001 to 71.4% in 2006. (Stats Can 2002f, 2007d). The employment rate of McLeod Lake residents was 64.3%, compared to 55.3% of Aboriginal people provincially (Stats Can 2007a).

##### Unemployment

Twenty percent of McLeod Lake IR 1 residents were unemployed in 2006, a decrease of 8.6% from the 2001 rate. However, it is 13% higher than the provincial rate in 2006, and 5% higher than the unemployment rate of Aboriginal people across the Province (15%; Stats Can 2002f; Stats Can 2007d, 2007a).

Unemployment services are provided to MLIB members through the Prince George Nechako Aboriginal Employment and Training Association (PRCI 2010).

#### 4.3.7.4 *Income and Earnings*

Due to the small size of the McLeod Lake IR 1 community, data on income and earnings was suppressed for 2005, the most recent data available on income and earnings (Stats Can 2007d).

#### 4.3.7.5 *Economy and Business Environment*

The labour force of McLeod Lake IR 1 was mainly employed in three key industries: agriculture and other resource-based industries (21%), manufacturing (14%), and business services (14%). A range of other services occupied an additional 43% of the labour force (Stats Can 2007d).

In terms of occupations, the majority of the McLeod Lake IR 1 population was employed in primary industry (40%); followed by trades, transport and equipment operators; processing, manufacturing and utilities; and business, management and administration (each of these employing 14%; Stats Can 2007d). Men worked primarily in trades, primary industry and manufacturing occupations, whereas women worked primarily in management and business, finance and administration (Stats Can 2007d).

In 2010, the Province of BC and MLIB signed an Economic and Community Development Agreement, a revenue-sharing agreement that ensures MLIB benefits directly from resource development at the Mt. Milligan mine project (BC MEMPR 2010).

### Businesses

MLIB owns several companies whose profits are used to support community programs or are reinvested in the businesses. Duz Cho Logging, established in 1988, is the main business operator and the major employer on the reserve. The company is also one of the largest logging contractors in BC. Annual logging counts average approximately 800,000 m<sup>3</sup> of timber and construction of up to 200 km of logging roads. In 2001, Duz Cho won the Aboriginal Business Award, and the following year, was awarded the Enterprise Business of the Year. In 2011, Duz Cho employed 60 full-time and seasonal employees, 70% of whom were Aboriginal (MLIB 2012). In 2006, the Band signed a five-year interim agreement with the BC government that provided Duz Cho Logging access to 175,000 m<sup>3</sup> of wood in the Mackenzie and Prince George TSAs (MARR n.d.-a).

The MLIB is looking to further diversify its economy in part due to the mountain pine beetle. The Annual Allowable Cut of the forests has been greatly increased in order to remove decimated pine forests before they become unusable. While there are currently significant amounts of work for the company, there is expected to be a downturn once pine beetle kill trees have been harvested. Consequently, in approximately 10 years, the band expects to reduce the size and employment of its logging company (MLIB 2012).

In 2002, the MLIB also established Duz Cho Construction with services that include project site development, road access, and reclamation for the oil and gas, wind energy, and mining industries. The company presently has its offices in Chetwynd (Plate 4.3-9) and also has property in the industrial area of Dawson Creek, which is used for repairs, storage and mobilization. Duz Cho Construction provides training to band members that they employ. The cost for Duz Cho to train an equipment operator is estimated at \$50,000 per person.



*Plate 4.3-9. McLeod Lake Indian Band Land Referral Office, District of Chetwynd.*

Duz Cho Construction has also formed alliances and joint ventures with businesses such as Ledcor, and WMFN's Dunne-za Ventures Ltd. Major accomplishments in the 2010 fiscal year included a tripling of sales from 2009 and the first-time remission of dividends to MLIB. In the 2011 fiscal year, assets were estimated at over \$10 million, making the company profitable. Twenty percent of all net profits are paid to the band (MLIB 2012).

In 2004, MLIB acquired 80% of Summit Pipeline Services, an Ontario-based construction company. Summit Pipeline Services operates across Canada and specializes in the repair and construction of oil and gas pipelines. It also provides piping and facilities services to the pulp and paper and processing industries, as well as to municipalities (MLIB 2012). The company has implemented a training and apprenticeship program to promote and sustain Aboriginal participation in its workforce (Summit n.d.). Since the purchase, Summit has opened offices in Calgary, Chetwynd and Dawson Creek (MLIB 2012).

Challenges to future growth by MLIB businesses include the inability to qualify for bonding; skilled employee retention; and lack of access to capital (MLIB 2012).

MLIB has also assisted band members to establish their own, independent business ventures. These currently include owner-operator equipment, forestry and construction businesses, steel sales and fabrication, and accommodation services (MLIB 2012).

#### 4.3.7.6 *Social and Health*

The Social Development and Health Department of MLIB is responsible for the provision of health and social services on the reserve. There is a Community Health Centre/Nutrition Centre on the reserve. Services include a youth support worker/youth group, infant and family development (parenting programs), and a Headstart pre-school. A clinical counsellor (mental health therapist) is also on staff. MLIB also supports the McLeod Lake Tse'khene Elders Society, which operates an Elders House in the community (MLIB 2012). All other medical services, however must be obtained in Mackenzie (PRCI 2010).

#### 4.3.7.7 *Infrastructure*

Facilities available on the reserve include a community hall, a church, a Band office, a health clinic, meeting rooms, general store, postal service, a gym, a motel and an inn (PRCI 2010).

#### Housing

There were a total of 45 private dwellings on McLeod Lake IR 1 in 2011 (a decrease of two dwellings from 2006), and 42 of them were occupied by usual residents, resulting in a 7% vacancy. Of these, 89% were single-detached houses, and the remaining 11% were "movable dwellings" (mobile homes, etc). There were an average of 1.8 people per household (Stats Can 2012h), notably below the provincial median for 2011 (2.5). In 2006 it was reported that 20 homes (40%) were constructed prior to 1986, and 20% of homes were in need of major repair (Stats Can 2007d).

Available housing does not meet current demand. The MLIB council is focused on addressing the issue of available housing stock with funds from recent partnership agreements made with the Province, as well as private sector agreements (D. Orr, Pers. Comm, 2010, in Finavera 2011a). MLIB has a Housing Policy to ensure equitable and consistent treatment of band members, the longevity of the housing stock, and continued success of the Housing Program (MLIB 2012).

#### 4.3.7.8 Utilities

##### Water

In 2005, all of the houses had potable running water supplied by piped system and two community wells (PRCI 2010).

##### Sewage and Garbage

The First Nations Connectivity Profile from 2003 states that the community had a garbage and sewage facility (Aboriginal Canada Portal 2004c); sewage is disposed in septic tanks (PRCI 2010).

##### Heating and Electricity

The First Nations Connectivity Profile for 2003 states that there was a heat and hydro utility on the reserve (Aboriginal Canada Portal 2004c). All of the houses had electricity in 2005 (PRCI 2010).

#### 4.3.7.9 Communications

Community residents have access to high-speed internet service, although less than 25% of households subscribed to the internet in 2003. Satellite television was also available on-reserve, and between 76 and 100% of households had satellite TV subscriptions (Aboriginal Canada Portal 2004c).

Every month, MLIB issues a newsletter known as *The Traveling Feather* (MLIB 2012).

#### 4.3.7.10 Transportation

McLeod Lake IR 1 is linked to Prince George in the south and Chetwynd in the north by Highway 97. A secondary road, Carp Lake Road links the reserve to Fort St. James and locations further west. The reserve has several unpaved roads (TMW 2009).

#### 4.3.7.11 Emergency and Protection Services

There are no fire services within the community, which is a concern for some residents (WCC 2007). Fire, ambulance and police services are provided by neighbouring communities, including Mackenzie and Bear Lake (PRCI 2010).

## 5. Summary

## 5. Summary

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While the Province of BC's economy has become increasingly diversified and service-oriented over its history, due to its burgeoning urban centres and its status as a hub for the Asia-Pacific trade, mining in recent years has contributed significantly to provincial revenue and job growth, as has the boom in oil and gas (particularly natural gas) extraction. Mineral prices have fluctuated over the past two decades, which have led to boom and bust economic scenarios in the more remote parts of the province that are typically more dependent on resource-based industries; however, demand from increasingly industrialized countries on the Pacific Rim for coal and other metals is likely to continue to trend mineral prices upward, resulting in an increase in mineral exploration and mine development across the province, particularly in mineral-rich areas of the north.

Most communities within the RSA are still strongly dependent on agriculture and the extraction of primary natural resources, though it is increasingly diversifying, with wind energy and tourism currently having a marked influence in the regional economy. Mining, oil and gas, and forestry are the predominant employers in the region, and are also linked to secondary production in the processing and manufacturing sector (including mineral processing and lumber/pulp mills).

A decline in the coal mining industry at the end of the 1990s and early 2000s resulted in an outmigration from many communities in the RSA that were not sufficiently buffered from the boom-bust cycle; this cycle has reversed in recent years with the re-opening of various mines as well as the opening of new mines. Though the RSA is currently in the midst of an economic boom, decision-makers in the region are faced with the challenge of maintaining economically sustainable communities immune to the boom-bust cycle.

While the economic boom in the RSA is generally seen as positive by those who live in the region, it has nevertheless resulted in three adverse effects to the LSA communities: First, the earning of high wages by workers throughout the region has led to an increased standard of living and a shortage of labour in the lower-paying service industries; second, the availability of high-paying jobs has led to a large influx of new residents and a noticeable shortage of housing, with many communities unable to keep up with the demand, leading to significant increases in housing prices; third, the "shadow populations" living in the communities are putting strains on existing infrastructure without paying residential taxes to use those services. Agreements between the municipalities and the PRRD have in recent years partially rectified the latter.

Aboriginal peoples have a physical and historical presence within the study area. Though they are in the minority in the larger communities, they make up a larger percentage of the regional population than in the Province as a whole. Low unemployment in these communities is atypical of other Aboriginal communities in the province and is due to the availability of high paying jobs in close proximity to where they live. Moreover, recent increases in the price of housing in the larger communities have made it necessary for some Aboriginal people to return to their home communities where housing is cheaper.

Transportation networks in the region are at a level currently adequate to meet the demand of a widely-dispersed and relatively small population. However, the inadequate size of their commercial airports, and the cost of flights to and from the region, makes advances in industries such as tourism prohibitive. Nevertheless, the area is well-served with respect to available airstrips and rail infrastructure.

Most communities are well serviced in terms of utilities and roads, with room for a growing population. Health, education and social services within Aboriginal communities are often limited, with residents relying on larger neighbouring communities for many services. Health services in non-Aboriginal communities are generally well developed, however long distances between smaller communities and regional service providers can delay access to appropriate care.

Alcohol and narcotics consumption, as well as incidences of crime and the presence of organized crime, has increased in correlation with the booming economy. Motor vehicles accidents are also on the increase due to long-distance commuting, speeding and alcohol consumption, and local emergency responders are beginning to strain from the demand on their services.

With its historic dependence on resource sector opportunities, the local labour force is experienced in trades and primary resource industries, and is accustomed to seasonal and shift-based work. However, education in the study communities, both Aboriginal and non-Aboriginal, is noticeably low. While the economic boom in the region has decreased the attractiveness of a post-secondary education, the lack of educational attainment has the potential to affect the sustainability of future economies of the LSA communities.

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