17 LABOUR MARKET

17.1 Approach

The labour market is the exchange of the supply of labour by workers for the demand of labour by employers. The potential labour supply for the Project is those workers with the required skills and occupational training. The labour supply may be drawn from residents living close by the Project, as well as persons throughout B.C., Canada, or internationally. Labour demand corresponds to the number of positions of the requisite skills at the required time to build and operate the Project, plus demand by supplier (i.e., indirect) and consumer (i.e., induced) industries supported by project expenditures.

Labour markets are dynamic, with fluctuations in both the numbers of persons in the labour force and the number of positions available from employers. The fluctuations can result in periods of labour surplus or labour scarcity. Forces inherent in the labour market, such as labour mobility and changing terms of employment, tend to restore balance between supply and demand. Provincial and federal initiatives also play a role in improving efficient labour market functioning.

The main factors that characterize the supply of labour are the number of people in the labour force by occupation and industry affiliation, unemployment rates, job search period, and contribution of non-resident workers. The indicators characterizing labour requirements are the estimated number of people to build the Project, derived from the 2010 cost estimate, and the number of jobs in the supplier and consumer industries as estimated by the British Columbia Input-Output Model (BCIOM).

17.1.1 Regulatory and Policy Setting

Full employment of the labour force is a primary objective of government labour policy. Programs and policies are aimed at improving the labour market efficiencies at the local, provincial, and national levels.

In northeast B.C. there are a number of current initiatives intended to better equip the unemployed, the underemployed, and persons entering the labour market. This includes partnerships funded under the Labour Market Development Agreement, and existing partnerships relevant to the Project's labour force needs, including the Northern B.C. Resource Sector HR Strategy, Northern Opportunities, the Industrial Training Association, and the B.C. Construction Association. The North East Native Advancing Society (NENAS) holds an agreement with Human Resources and Skills Development Canada under its Aboriginal Skills and Employment Training Strategy. Programs aimed at enhancing employment opportunities are summarized in Table 17.1.

Table 17.1 Summary of Northeast B.C. Labour Market Programs

Area of Support	Description	Delivery Agencies in the LAA [a]
Job Support for the Unemployed	Assisting clients in successful job search	Employment Connections (FSJ [b]) Catholic Social Services (Dawson Creek) Employment Services (Fort Nelson) Obair Economic Society (FSJ, Dawson Creek, Chetwynd) T.R.A.D.E.S. (FSJ) North East Native Advancing Society (FSJ)
Skills Training for the Unemployed	Training programs prepare participants to take (often entry-level) employment in occupation/industry experiencing or expected to experience skill shortage	Northern Lights College British Columbia Construction Association's Skilled Trades Employment Program (STEP) North East Native Advancing Society (FSJ)
Job Training for the Low Skilled	Employment related training to low skilled employees working in targeted sectors	Employment Connections (FSJ) Northern Lights College North East Native Advancing Society (FSJ)

NOTES:
[a] LAA – Local Assessment Area (see Section 17.1.5.1)
[b] FSJ – Fort St. John
Sources: NENAS (2011); NDIT (2012)

The Red Seal program allows qualified tradespeople to practice their trade in any province without having to write additional exams, thus improving labour mobility in Canada (HRDC 2012).

Canada provides for the hiring of foreign workers on a temporary basis to fill immediate skills and labour shortages when Canadians and permanent residents are not available through the Temporary Foreign Worker Program, which is administered jointly by Human Resources and Skills Development Canada with Citizenship and Immigration Canada. Temporary foreign labour can be accessed through the Labour Market Opinion process.

Foreign skilled and experienced workers who wish to settle in B.C. permanently can also apply under the British Columbia Provincial Nominee Program, which expedites the permanent resident application process. Workers can apply under either strategic occupations or business categories. Examples of strategic occupations are managers, technicians, and skilled trades. The program is administered on behalf of the Province of B.C. by the Ministry of Jobs under the authority of Citizenship and Immigration Canada (BCMJTI No date).

Under the federal *Canadian Human Rights Act* and the B.C. *Human Rights Code*, it is not a discriminatory practice for an employer to give preferential treatment to Aboriginal persons in hiring, promotion, or other aspects of employment, when the primary purpose of the employer is to serve the needs of Aboriginal people.

In 2006, BC Hydro's Board of Directors adopted a 10-year Aboriginal Education and Employment Strategy. The corporation supports the recruitment, education, and job skills development of Aboriginal persons as an element of its ongoing provincially applicable initiatives in these areas; an example is its Trades Trainee Program. It also operates initiatives specifically targeted at the province's Aboriginal population, such as its Aboriginal Scholarships program.

17.1.2 Key Issues and Identification of Potential Effects

Issues, concerns, and interests identified during consultation with the public, Aboriginal groups, and government agencies guided the scope of the labour market assessment (refer to Volume 1 Section 9 Information Distribution and Consultation). The key issues identified and the approaches used to address issues are outlined in Table 17.2.

Table 17.2 Key Issues: Labour Market

Key Issues	Approach to Addressing Key Issues
The loss of jobs and business opportunities in those industries negatively effected by the Project, such as tourism, forestry, and agriculture.	Potential changes in economic activity associated with changes in land and resource use is addressed in the relevant valued components in Volume 3.
Qualified residents and businesses want the opportunity to fully participate in construction and operating phases, as a community benefit.	Project labour and business requirements compared with local capacity is addressed in Labour Market and in the Regional Economic Development VCs.
Describe direct and associated employment with the Project by major category, full time/part time and seasonal, wage rates, and use of underutilized local human resources.	Section 17.4 provides employment estimates by major occupation category. Further details will be based on contractor scheduling and hiring decisions, and will be available at the construction phase.
Existing contractors and businesses are concerned that the Project will lure away their best employees.	Project labour and business requirements compared with local capacity is addressed in the Labour Market VC and the Regional Economic Development VCs.
First Nations' concern with pressures on labour supply, as a result of in-migration (BRFN [a]; T8TA [b]).	Mitigation measures to address employment barriers of Aboriginal persons.
First Nations' concern with brain drain (T8TA).	Mitigation measures to address conditions of labour shortages in the overall labour market and the Aboriginal labour market in the region.
First Nations' concern that "boom and bust" cycle of a project creates difficulties in developing skills and sustaining lifestyles (SFN [c], T8TA [b]).	Mitigation measures to address employment barriers of Aboriginal persons.
First Nations' interest in benefits (employment, contracting opportunities, business development and capacity building) accruing to local residents (SFN).	Mitigation measures to address employment barriers of Aboriginal persons.
First Nations' concern that the Project would result in a medium-term (5–10 years) growth cycle in the local economy; could contribute to inflation (T8TA).	Comparison of project labour requirements with local labour supply in Labour Market VC. Mitigation measures to address local labour shortages.
First Nations' concern that low job satisfaction, racism, lack of advancement and training, long-distance commuting, destructive nature of work may influence retention rates of First Nations workers in Project construction (T8TA).	Mitigation measures to address employment barriers of Aboriginal persons.
First Nations concern regarding quality of work environment and job satisfaction levels (T8TA).	Mitigation measures to address employment barriers of Aboriginal persons.

NOTES:

[a] BRFN – Blueberry River First Nations

[b] T8TA – Treaty 8 Tribal Association

[c] SFN – Saulteau First Nations

Potential project interactions with the Labour Market are summarized in Volume 2 Appendix A Project Interactions Matrix, Table 2. As defined in Volume 2 Section 10 Effects Assessment Methodology, a "2" ranking is assigned where an interaction may result in an adverse effect and mitigation measures are not well understood to be

effective. These interactions were taken forward through the effects assessment. Project interactions with a ranking of "2" are set out in Table 17.3 below.

Project effects are assessed at the phase level, not at the component level, because the interaction with labour supply is with respect to labour demand combined for the Project components. Project labour demand during the construction phase would be substantial relative to the size of the overall resident labour force and the Aboriginal labour force in the LAA; hence, there is the potential to adversely affect the labour market.

Table 17.3 Interactions of the Project with Labour Market

Project Activities and Physical Works	Key Aspects		
	The direct Project's needs for labour relative to the expected availability and type of skills of the persons in the LAA [a] as proposed by the Proponent	**The indirect project employment calculated using the British Columbia Input-Output Model**	**Comparison of labour requirements against baseline and forecast local labour supply and demand by skill category**
Construction	✓	✓	✓

NOTES:

Only Project interactions ranked as "2" in Volume 2 Appendix A Project Interaction Matrix, Table 2 are carried forward to this table. A ✓ indicates that a project phase is likely to interact with Labour Market.

[a] LAA – Local Assessment Area (see Section 17.1.5.1)

17.1.3 Standard Mitigation Measures and Effects Addressed

A "1" ranking was given where an adverse effect may result from an interaction, but standard mitigation measures to avoid or minimize the potential effects are available and well understood to be effective, and any residual effect is negligible. These interactions were not carried forward through the effects assessment.

A "1" ranking was assigned to Project operations because the expected labour demand is very low relative to the existing labour force in the region. Operations would involve an estimated 25 full-time positions annually, with about half of these in the region.

Incremental labour demand would also occur over the Project life in relation to capital expenditures to keep the Project operating. Over the first 100 years of operation, the capital expenditure for sustaining capital would total about $1.18 billion dollars with employment of 3,270 person-years (Volume 3 Appendix A Economic Assessment Supporting Documentation, Part 2 Project Economic Impacts: BC Stats). The first such sustaining capital expenditure is scheduled for approximately the 40th year of operation, with other expenditures distributed over the following 60 years. Annualized, the direct expenditure and labour requirements for any particular year would be a fraction of the total, which would be very low in relation to the total local labour market. If the historical trend projects into the future, then the size and skills of the local labour force will grow and change with economic conditions. Standard mitigation measures would also be expected to evolve and become more effective in avoiding or minimizing potential effects. Given these considerations, a "1" was assigned to this component of operations.

Labour market is not assessed for the operations phase, as the expected labour demand would be very low relative to the existing and projected labour force in the region.

Operations would involve an estimated 25 full-time positions annually, with about half of these in the region.

17.1.4 Selection of Key Indicators

Key Indicators for assessing the Project effects on the Labour Market are summarized in Table 17.4.

Table 17.4 Key Indicators for Labour Market VC

Key Aspects	Key Indicators	Rationale for Selection of the Key Indicators
Direct Project's labour needs relative to the expected availability and type of skills of persons in the LAA.	Number of persons by occupation and industry affiliation, and available skills in the local labour force and turnover rates.	Characterizes the Project's main effects on the labour market.
The indirect project employment calculated using the British Columbia Input-Output Model.	Number of persons by occupation and industry affiliation.	Employment stimulated by the local Project expenditure will increase the demand on the local labour force.
Comparison of Project labour requirements against baseline and forecast local labour supply and demand by skill category.	▪ Project direct labour requirements ▪ Contribution of non-resident workers in the North East Development Region's labour force ▪ Estimates of skill shortages and surpluses ▪ Number of persons by occupation and industry affiliation, and available skills in the local labour force ▪ Unemployment rates, demographics and characteristics, length of unemployment, job search period	Existing labour force characteristics indicate the extent to which Project requirements may be met from within the local assessment area (LAA). Unemployment rate is a reliable indicator of the status of the balance in a labour market.

NOTE:

[a] Includes input from consultation with regulators, First Nations, affected stakeholders, and the public, as well as regulatory guidelines, policies, and programs.

17.1.5 Spatial and Temporal Boundaries

17.1.5.1 Spatial Boundaries

The spatial boundaries for the Labour Market VC assessment are reported in Table 17.5. The LAA and RAA for Labour Market are illustrated in Figure 17.1.

The local assessment area (LAA), or the area within which potential labour market effects could be experienced, is defined as the Peace River Regional District (PRRD) and the Northern Rockies Regional Municipality (NRRM), which, together, are known as the Northeast Development Region (NEDR). Baseline labour supply information, labour force trends, and forecast of labour market conditions to 2021 is presented for either the PRRD or for the NEDR as a whole, depending on availability of data. Where it is available, baseline labour force information is presented for communities such as Fort St. John, and for Aboriginal communities adjacent to the Project.

Baseline labour supply information is presented, where available, for First Nations communities and the Aboriginal population in the LAA. In the Census of Population, the Aboriginal population refers to those persons who reported identifying with at least one Aboriginal group, i.e. North American Indian, Métis, or Inuit, and/or those who reported they were members of an Indian band or First Nation, or reported being a Treaty Indian or a Registered Indian. This population includes Aboriginal residents of First Nations communities and non-First Nations communities such as municipalities.

The borders of the Northeast Development Region and First Nations traditional territories and Indian Reserve communities do not precisely overlap. The First Nations with communities situated within the boundaries of the LAA include the Doig River First Nation, Halfway River First Nation, Prophet River First Nation, West Moberly First Nations, Blueberry First Nation, Saulteau First Nations, and Fort Nelson First Nation. Duncan's First Nation, Horse Lake First Nation, and McLeod Lake Indian Band are located outside the boundaries of both the LAA and RAA. Where Duncan's First Nation, Horse Lake First Nation, McLeod Lake Indian Band, and other First Nations outside the LAA have identified interests in potential effects on regional economic development, these are discussed in Volume 5 Section 34 Asserted or Established Aboriginal Rights and Treaty Rights, Aboriginal Interests, and Information Requirements. The baseline information for those communities is presented in Volume 3 Appendix B First Nations Community Baseline Reports, Part 3 Community Baseline Report and EIS Integration Summary Table for Duncan's First Nation and in Part 4 Community Baseline Report and EIS Integration Summary Table for Horse Lake First Nation.

The Regional Assessment Area (RAA) for Labour Market is the LAA plus the Fraser Fort George Regional District (FFRD). The First Nations communities in the RAA include the First Nations communities in the LAA plus the McLeod Lake Indian Band. Projects in the FFRD that draw on the labour force in the LAA owing to relatively close proximity and movement of labour through the region might act cumulatively with Project effects if there is a temporal overlap.

The LAA and RAA for Labour Market are illustrated in Figure 17.1.

Table 17.5 Spatial Assessment Areas for Labour Market

Local Assessment Area	Regional Assessment Area
Peace River Regional District and Northern Rockies Regional Municipality	Peace River Regional District, Northern Rockies Regional Municipality and Fraser-Fort George Regional District

17.1.5.2 Temporal Boundaries

The temporal boundary for the Labour Market VC is Year 1 through 8 of the Project construction phase.

Labour market is not assessed for the operations phase, as the expected labour demand would be very low relative to the existing and projected labour force in the region. Operations would involve an estimated 25 full-time positions annually, with about half of these in the region.

17.2 Information Sources and Methodology

17.2.1 Literature Review

Historic and current research literature informed the specification of baseline conditions and assisted with assessing potential effects. Key information sources included:

- Census information and labour market surveys from Statistics Canada
- Labour market research and forecasts from government agencies such as WorkBC and BC Stats, and from research-focused organizations such as Centre for the Study of Living Standards, Caledon Institute of Social Policy and Conference Board of Canada
- First Nations membership data from Aboriginal Affairs and Northern Development Canada (AANDC)
- First Nations community baseline profiles developed and supplied by: Treaty 8 First Nations of Doig River First Nation, Halfway River First Nation, Prophet River First Nation and West Moberly First Nations (detailed in Volume 3 Appendix B First Nations Community Baseline Reports, Part 7 Community Baseline Report and EIS Integration Summary Table for Doig River First Nation, Halfway River First Nation, Prophet River First Nation, and West Moberly First Nations)
- Other First Nations' supplied information, such as profiles of First Nations-owned companies

The national Census of Population conducted by Statistics Canada every five years provides the most complete and reliable labour market data (e.g., labour force size, gender, age, employed and unemployed status, occupation, and industry). Statistics Canada also collects and publishes census labour force and demographic data by Aboriginal identity and First Nations communities. A complete data set for the 2006 Census is the most recent available at the time of writing. The Labour Force Survey, which is conducted monthly by Statistics Canada, and aggregated to annual levels, reports labour force and unemployment rate statistics at the development region level.

The effects assessment was assisted by regional forecasts of future labour market conditions completed by BC Stats and WorkBC. All literature and data sources used in the assessment are listed in References at the end of this section.

17.2.2 Interviews

Interviews were completed with labour organizations and employment offices to assist in interpretation and use of census data, and to assist in characterization of the size and role of the transient (non-resident) workforce not recorded in census statistics. Volume 3 Appendix A Economic Assessment Supporting Documentation, Part 1 Economic Assessment Interview Methodology outlines details on the interview methodology.

17.2.3 Data Management, Mapping, and Modelling

The direct labour demand of the Project was provided by BC Hydro. The indirect and induced labour demand was estimated by BC Stats (Volume 3 Appendix A Economic Assessment Supporting Documentation, Part 2 Project Economic Impacts: BC Stats), based on an analysis of the project construction expenditure.

17.2.4 Aboriginal Community and Traditional Knowledge

Aboriginal community and traditional knowledge related to the Labour Market VC were gained through review of results of BC Hydro's consultation with Aboriginal groups and reviews of First Nations community baseline studies prepared by the following First Nations in the LAA: Doig River First Nation, Halfway River First Nation, Prophet River First Nation, and West Moberly First Nations. While the communities and traditional territories of the Blueberry First Nations and Saulteau First Nations are within the boundaries of the LAA, and McLeod Lake Indian Band is within the boundaries of the RAA, BC Hydro had not received community baseline information from them at the time of writing.

Baseline information and data as well as First Nations concerns and interests relevant to the labour market are incorporated in the baseline and effects assessment. The First Nations community baseline reports are provided in Volume 3 Appendix B First Nations Community Baseline Reports, Part 7 Community Baseline Report and EIS Integration Summary Table for Doig River First Nation, Halfway River First Nation, Prophet River First Nation, and West Moberly First Nations.

BC Hydro's approach to gathering community-based social and economic data with First Nations is described in Volume 3 Appendix B First Nations Community Baseline Reports, Part 1 Approach to Gathering and Integrating Community Baseline Information.

17.3 Baseline Conditions

The labour market baseline data collection focused on skills and occupations required by the Project, using the following key indicators:

- Number of persons, by occupation and industry affiliation, available skills in the local labour force, and turnover rates
- Unemployment rates, demographics and characteristics, length of unemployment, job search period
- Contribution of non-resident workers in the North East Development Region labour force
- Estimates of skill shortages and surpluses

A summary of the labour market baseline for the general population in the LAA is provided below. The detailed baseline is included in Volume 3 Appendix A Economic Assessment Supporting Documentation, Part 3 Labour Market: Additional Baseline Information.

17.3.1 Labour Force by Occupation and Industry Affiliation

In 2006, approximately 1.5% of the province's total population and 1.7% of the provincial labour force resided in the LAA. Key labour force characteristics for the LAA B.C. are summarized in Table 17.6.

Compared to B.C., the labour force in the LAA has a low unemployment rate and high participation rate. At the time of the 2006 Census, unemployment rates in the LAA indicated a balanced labour market, defined as unemployment above 5% and below 7%.

Table 17.6 Labour Market Statistics for the LAA and B.C.–2006 [a]

Area	Labour force (persons)	Employed (persons)	Participation Rate [b] (%)	Unemployed (persons)	Unemployment Rate (%)
LAA	38,320	36,165	76.9	2,160	5.6
B.C.	2,226,380	2,092,770	65.5	133,615	6.0

NOTE:

[a] The data in this table were accessed via BC Stats but is from the Census of Canada. In the census, the labour force refers to persons aged 15 and over who were either employed or unemployed during the week prior to Census Day (May 16, 2006).

[b] Calculated as the number of persons in the labour force divided by the total population over 15 years of age

Source: BC Stats (2010)

The available skills are characterized by the occupational profile of labour force in the LAA is summarized in Table 17.7.

Trades and occupations unique to primary industry comprise a larger percentage of the labour force in the LAA than in the province overall.

Changes in labour force in the LAA and in B.C. that occurred between 1995 and 2010 are presented in Figure 17.2. While the total labour force in the LAA increased by about 14% (5,000 persons) during this time, the construction labour force grew by 86%.

Table 17.7 Labour Force by Occupation in the LAA and in B.C. (2006)

Occupation	LAA (%)	B.C. (%)
Management	8	10
Business, finance, and administration	15	17
Natural and applied sciences, and related	5	6
Health	4	5
Social science, education, government service, and religion	6	8
Art, culture, recreation, and sport	2	3
Sales and service	22	25
Trades, transport and equipment operators, and related	25	15
Occupations unique to primary industry	10	4
Occupations unique to processing, manufacturing, and utilities	5	4

NOTES:

Source: BC Stats (2010)

17.3.2 Job Search, Unemployment, Demographic Characteristics, and Turnover

In 2011, in an average month, approximately 300 to 500 people visited the Fort St. John office of Trades Referral Assessment, Direct Employment (T.R.A.D.E.S.) and approximately 1,000 people visited the Employment Connections office. About 75% of the visits were from local residents out of work or looking to change jobs, which provides insight into job turnover rates for residents within the LAA. The remainder of job seekers were non-residents (transients), most of whom resided in southern B.C. The majority (residents and non-residents) were male, with about 30% being 25 years of age or younger and about 70% being 40 years of age or younger. Workers with certification and training for in-demand positions typically found employment within a week, while persons

with fewer skills or training who were seeking entry-level positions were unemployed for a longer period. Employment barriers such as personal issues and drug or alcohol abuse were identified as the main reasons for extended unemployment (Jones 2011 pers. comm.).

In addition to the rate of unemployment estimate at the census, labour force monitoring provides annual estimates. Figure 17.3 shows the annual average unemployment rate for B.C., in the LAA, and in the B.C. construction industry from 1995 to 2010, along with the natural rate of unemployment. Unemployment in the LAA shows considerable year-to-year variation but, in most years, it was less than the provincial rate. The average unemployment rate in the LAA over the 15-year period was 6.2%, compared to 7.3% in B.C. The unemployment rate in the LAA was below the natural rate of unemployment in 1998, 2005, and 2008, while the province was below that level from 2006 to 2008, and the construction industry was below that level from 2005 to 2008.

The unemployment rate is a reliable indicator of balance in the labour market. In recent research and modelling of B.C.'s labour market the natural rate of unemployment (termed the normal unemployment rate) was approximately 6% at the provincial level and approximately 5% for the northeast (BCMJTI, Director, Labour Market and Immigration 2012 pers. comm.). An unemployment rate below 5% indicates relative labour scarcity in the labour market. An unemployment rate in excess of 7% indicates relative lack of labour demand.

17.3.3 Labour Force and Skills, Shortages and Surpluses

Labour force participation by industry, for both Aboriginal and non-Aboriginal participants, is summarized in Table 17.10.

A survey of employers based in the LAA, conducted by Statistics Canada in April 2009, explored employment conditions for the major occupational categories (BC Stats and Statistics Canada 2009). The survey found that the highest hourly wage rates were in the trades occupations, that wage rates in the LAA for trades were higher than provincial rates, and that the average work week for people working in the LAA exceeded the provincial average.

The survey investigated the potential labour surplus or scarcity by occupation class by asking employers whether they were having difficulty filling positions and the length of time vacant positions were advertised prior to being filled. The results indicated that employers in the LAA experienced the greatest difficulty hiring persons in the sales and service occupations. Those employers hiring tradespersons indicated fewer difficulties than for the province as a whole. For a number of occupations, employers in the LAA had advertised vacant positions for longer than four months, which is an indication of limited labour supply.

A late 2007 survey of Fort St. John businesses and labour market participants found that Fort St. John was experiencing a labour shortage (Ipsos Reid Public Affairs 2007). The construction industry was second only to the services industry in experiencing labour scarcity, with 93% of respondents indicating that the construction industry was facing a shortage of suitably qualified workers. Also, construction firms had the most success recruiting from the Fort St. John area as well as from the rest of B.C., Alberta, and Atlantic Canada. Among the major employers in the LAA, construction firms also experienced the highest turnover rate.

Local labour scarcity eased somewhat in 2008 due to the worldwide economic recession, and an increasing number of job seekers visited employment agencies. Employment seekers included qualified tradespeople, but the majority had only entry-level skills and training. These persons were the last hired when the economy was growing strongly, and were among the first to be let go as business slowed down (Jones 2011 pers. comm.). For most tradespeople, the labour shortage in the Fort St. John area persisted through the recession.

The scarcity of available tradespersons is illustrated by the status of members of the union representing operating engineers, an important trade for project construction. This union had a total of about 650 members working in the LAA in 2011, about 450 of whom resided in the LAA (BC Building Trades, Members Representative, Local 115 2011 pers. comm.). Another 50 members live in the LAA but work outside the LAA. About half of its members work out of remote camps, such as Horne River. Mine construction and operations is the single largest employer of members in the region. Other projects include road building, pipeline construction, gas plant construction, wind projects, and civil works.

Rising labour scarcity was evident in the LAA in 2011, primarily as a result of oil and gas activity. Since reaching a peak unemployment rate of over 9% in the first two months of 2011, the rate declined to 4% by June 2011, and remained below 5% up to September 2011 (BC Stats 2011; Jobsearchonline 2011).

The wage and benefit packages and the frequency of overtime offered by the oil and gas sector attract tradespersons. Other industries must compete for this skilled labour force. For example, a large proportion of the 600 trades jobs required to retool the Canfor mill were filled by non-residents of the LAA, mainly from southern B.C. Some positions were also filled by people from Ontario and the Maritime provinces (T.R.A.D.E.S., Employment Councillor 2011 pers. comm.). Further, the oil and gas industry has drawn persons away from the four-year apprenticeship programs required to acquire trade credentials (T.R.A.D.E.S., Employment Councillor 2011 pers. comm.).

Some service industry employers in the LAA (i.e., accommodation and food services, and retail trade industries) experienced labour scarcity and high turnover throughout 2011 and, in some cases, relied on temporary foreign workers to fill positions (Jones 2011 pers. comm.).

Census and labour force surveys report a worker's normal place of residence. Temporary residency, for example in hotels or work camps, is not captured in the census. An anecdotal estimate indicates this non-permanent resident labour force could be between 10,000 to 15,000 persons in the Fort St. John and Dawson Creek areas (NPEDC, Economic Development Officers 2011 pers. comm.). This non-resident labour force is an indication of local labour and skills shortages.

17.3.4 Labour Market Outlook

WorkBC projects 18,000 job openings in the LAA between 2010 and 2020, 60% of which will be existing positions that become vacant and the remaining 40% will be new jobs (BCMJTI 2011). Vacancies will be created mainly by retiring workers, while new jobs will be created by major resource projects in mining, oil and gas, energy, and infrastructure.

Trades and administrative occupations are expected to experience the largest number of job openings. The labour supply will expand as young people enter the market, but

non-resident workers are also anticipated to meet demand. This job outlook includes consideration of anticipated major project developments in the northeast, including the Project (BCMJTI, Director, Labour Market and Immigration 2012 pers. comm.).

17.3.5 Aboriginal Peoples

The labour market baseline for Aboriginal peoples in the LAA focused on its labour supply features, using the following key indicators (where data are publicly available):

- Labour force size, participation rate, unemployed numbers, and unemployment rate of the Aboriginal population and First Nations communities in the LAA
- Occupation and industry affiliation of the labour force of the Aboriginal population and First Nations communities in the LAA

Comparison between the Aboriginal and non-Aboriginal labour forces in the LAA are presented to determine similarities and differences in relation to these labour force characteristics.

17.3.5.1 Aboriginal Labour Force Indicators

The Aboriginal population accounted for 10.4% of the labour force in the LAA in 2006, with an unemployment rate of the Aboriginal labour force (14.6%) over three times more than the rate for the non-Aboriginal labour force in the LAA.

The monthly Labour Force Survey includes a question to determine if a respondent identifies as an Aboriginal person. The unemployment rate for Aboriginal persons living off-reserve in the LAA in 2011 was 8.8%, compared to 4.4% for non-Aboriginal persons. This survey does not include respondents living in First Nations communities.

Labour force indicators for the Aboriginal population and First Nations communities in the LAA are presented in Table 17.8.

Table 17.8 Labour Market Statistics for the Aboriginal Population in the LAA

Population and First Nations Communities	Labour Force (persons)	Employed (persons)	Participation Rate (%)	Unemployed (persons)	Unemployment Rate (%)
Labour Force Survey data (2011) [a]					
Non-Aboriginal Population ('000)	35.7	34.1	76.8	1.6	4.4
Aboriginal Population (off-reserve only) ('000)	3.4	3.1	69.5	0.3	8.8
Census of Population data (2006)					
Non-Aboriginal Population	34,350	32,775	76.9	1,580	4.6
Aboriginal Population (on-reserve & off-reserve)	3,970	3,390	70.5	580	14.6
Doig River First Nations	35	30	53.3	10	30
Halfway River First Nation	NA	NA	50.0	NA	50
Prophet River First Nation	NA	NA	64.3	NA	33
West Moberly First Nations	NA	NA	50.0	NA	NA

NOTE:

[a] The Labour Force Survey data reported in this table are an annual average, whereas the census data are for the week prior to Census Day (May 16, 2006). The Labour Force Survey provides the most up-to-date data on labour force characteristics, but the Census of Population provides a more accurate point-in-time estimate. The Labour Force Survey is conducted on a large sample of the Canadian population, approximately 100,000 persons and 54,000 households on a monthly basis. Responding to this survey is mandatory. The 2006 Census of Population also used a sampling procedure, but had a larger sample: one in five Canadian households. The larger sample of the Census of Population provides for a more accurate estimate of labour force characteristics.

NA – data not available

Sources: First Nations Community Baseline Reports (see Volume 3 Appendix B First Nations Community Baseline Reports, Part 7 Community Baseline Report and EIS Integration Summary Table for Doig River First Nation, Halfway River First Nation, Prophet River First Nation, and West Moberly First Nations); Statistics Canada (2007, 2009); BC Stats (2012a)

Most First Nations communities in the LAA experience higher unemployment rates and lower participation rates than the Aboriginal population living off-reserve in the LAA. The higher unemployment rates in most First Nations communities in the LAA compared to the Aboriginal population residing in non-Aboriginal communities are likely due to the limited wage-based economic activity in the First Nations communities and the longer commuting distances to the centres with job opportunities. This differential between Aboriginal people living on Indian Reserves and Aboriginal people living off Indian Reserves is typical across the province; the unemployment rate for Aboriginal people living on-reserve in 2006 was 25.0%, twice as much for Aboriginal people living off-reserve, 11.9% (BC Stats 2012b).

The First Nations communities that are close to the main centres of economic activity in the LAA have lower levels of unemployment compared to those living further away. For example, the First Nations communities of the West Moberly First Nations are currently experiencing strong employment. The community is about 30 km from Chetwynd, 30 km from Hudson's Hope and 90 km from Fort St. John, all of which are strong economic centres. There is an anecdotal reference in the Baseline Community Profile of Doig River First Nations, Halfway River First Nation, Prophet River First Nation and West Moberly First Nations that the current unemployment rate in the West Moberly First Nations community is low, "…everybody that wants to work is working and almost all of them have good jobs" (T8FNs Community Assessment Team and The Firelight Group

Research Cooperative 2012a:124) and in Volume 3 Appendix B First Nations Community Baseline Reports, Part 7 Community Baseline Report and EIS Integration Summary Table for Doig River First Nation, Halfway River First Nation, Prophet River First Nation, and West Moberly First Nations).

The situation of high unemployment and low participation rates is more acute in First Nations communities that are more remote from the main nodes of economic activity, including Doig River First Nation, Halfway River First Nation and Prophet River First Nation. Several observations about challenges with transportation to work and training challenges for Aboriginal persons living in First Nations communities were reported, A couple were as follows, "…"no job, no vehicle...no vehicle, no job"; people do not generally own vehicles…" (T8FNs Community Assessment Team and The Firelight Group Research Cooperative 2012b: row 66) and in Appendix B; Volume 3 Appendix B First Nations Community Baseline Reports, Part 7 Community Baseline Report and EIS Integration Summary Table for Doig River First Nation, Halfway River First Nation, Prophet River First Nation, and West Moberly First Nations.

In addition to historical, social, and systemic barriers, adult residents of these communities face weak on-reserve economic activity and commuting challenges, including higher transportation costs, to access off-reserve jobs. These challenges are reflected in their higher unemployment rates compared to the rate for Aboriginal persons living off-reserve in the LAA. For example, the Halfway River First Nation, located approximately 115 km and a one-and-a-half-hour drive from Fort St. John, has a high unemployment rate, 50% in the 2006 Census. Anecdotal reporting indicates most residents rely on social assistance and those who work rely on seasonal jobs (T8FNs Community Assessment Team and The Firelight Group Research Cooperative 2012a:104) and in Volume 3 Appendix B First Nations Community Baseline Reports, Part 7 Community Baseline Report and EIS Integration Summary Table for Doig River First Nation, Halfway River First Nation, Prophet River First Nation, and West Moberly First Nations. The high unemployment and seasonal work situation is similar for the Prophet River First Nation community, which is located 90 km south of Fort Nelson and 350 km north of Fort St. John.

The earnings of well-qualified Aboriginal persons (age 35 to 54 with college credentials, working 40+ weeks per year, mostly full time) in the LAA are less than their comparable non-Aboriginal counterparts in the LAA. There is also a large difference in earnings in favour of Aboriginal persons living off-reserve (80.9% of the earnings of non-Aboriginal persons) compared to those living on-reserve (54.8% of the earnings of non-Aboriginal persons) (BC Stats No date).

17.3.5.2 Aboriginal Labour Force and Skills

The occupational profiles of the Aboriginal and non-Aboriginal labour forces in the LAA are summarized in Table 17.9. A high proportion of the Aboriginal labour force has skills in occupations associated with construction and resource-based primary industries, such as truck drivers, construction labourers, and tradespersons. The non-Aboriginal population has similar proportions of its labour force with these skills. By comparison, these occupation groups account for much lower shares of the province-wide labour force.

Table 17.9 Labour Force by Occupation, LAA (2006)

Occupation	Aboriginal (%)	Non-Aboriginal (%)
Management	5	8
Business, finance, and administration	11	15
Natural and applied sciences, and related	4	5
Health	2	4
Social science, education, government service, and religion	5	6
Art, culture, recreation, and sport	1	2
Sales and service	26	22
Trades, transport and equipment operators, and related	28	25
Occupations unique to primary industry	11	10
Occupations unique to processing, manufacturing, and utilities	5	5

NOTES:
Source: Statistics Canada (2007)

Aboriginal persons in the LAA were more likely to be employed as trades, transport and equipment operators, and in sales and service occupations, as well as occupations unique to the primary industry, than were non-Aboriginal persons in 2006. By comparison, non-Aboriginal residents in the LAA were more represented in management and natural and applied sciences occupations than Aboriginal residents.

An example of the trades orientation of First Nations employment is provided in the community profile for West Moberly First Nations, which reported that 16 to 18 of its members are self-employed, with seven member-operated businesses. The focus is on enterprises that serve the oil and gas, forestry, and construction industries (Volume 3 Appendix B First Nations Community Baseline Reports, Part 7 Community Baseline Report and EIS Integration Summary Table for Doig River First Nation, Halfway River First Nation, Prophet River First Nation, and West Moberly First Nations).

Educational attainment is an important factor in the employment situation of the Aboriginal labour force and its occupational distribution. The gap in education levels between Aboriginal and non-Aboriginal persons in the LAA was similar to that of the province. High school non-completion rates for Aboriginal youth have been a major public policy concern for several years. A high school diploma is an important qualification across economic sectors. The unemployment rate in 2006 for Aboriginal persons aged 35 to 54 in the LAA without high school graduation was 20.0%; for those with a high school diploma, the unemployment rate was a much lower 8.1%. The high school completion rates in the LAA for Aboriginal and non-Aboriginal residents (aged 25 to 64) were low in both cases: 25% and 29% respectively, but similar to the provincial levels. There was a gap, however, between Aboriginal persons in the LAA living off-reserve and those who reside on-reserve; the latter's high school completion rate is much lower, 15%, compared to 28% for the former group.

Although the high school graduation rates are similar between Aboriginal and non-Aboriginal persons in the LAA, the gap in their post-secondary qualifications rates is large, 34% versus 51%, respectively. The post-secondary qualifications rate for Aboriginal persons in the LAA is low within the provincial Aboriginal population; the current province-wide post-secondary qualifications rate is 48.9% for Aboriginal persons (BC Stats 2012b).

Although researchers have found that insufficient educational qualifications are the main barrier for Aboriginal persons when accessing employment opportunities (MNP 2012; Sharpe et al. 2009), they are not the only barriers. Sharpe et al. (2009) found that Aboriginal persons with the same level of educational qualifications as a non-Aboriginal person are likely to be unemployed, pointing to other barriers at play. In a survey-based study for Industry Training Authority, MNP (2012) cited these other barriers:

- Lack of readiness and awareness, e.g., at community level, relative to life skills
- Geographic barriers, e.g., access to transportation, ability to relocate
- Funding, e.g., for individuals, for programs
- Difficulty in securing employer sponsorship
- Lack of Aboriginal awareness within workplaces

The Baseline Community Profile of Doig River First Nations, Halfway River First Nation, Prophet River First Nation and West Moberly First Nations cited the following employment barriers: lack of child care, lack of education and training, isolated location and poor transportation options, emotional health issues, alcohol and drug problems, lack of life skills, higher-than-average health concerns and disabilities, racism/discrimination at work sites, destructive nature of resource extraction jobs, and greater exposure to economic downturns (T8FNs Community Assessment Team and The Firelight Group Research Cooperative 2012a:231–232) and in Volume 3 Appendix B First Nations Community Baseline Reports, Part 7 Community Baseline Report and EIS Integration Summary Table for Doig River First Nation, Halfway River First Nation, Prophet River First Nation, and West Moberly First Nations).

The industries in the LAA in which Aboriginal and non-Aboriginal persons work are similar. Both segments had about one-fifth of their labour force working in resource-based industries, mainly oil and gas, and forestry. In 2006, Aboriginal persons in the LAA were more likely to be employed in public administration and construction than their non-Aboriginal counterparts. Non-Aboriginal persons were more represented in business services, in wholesale trade, and in professional, scientific, and technical services. The industry distribution for the Aboriginal and non-Aboriginal labour forces in the LAA are summarized in Table 17.10.

Table 17.10 Labour Force by Industry, LAA (2006)

Occupation	Aboriginal (%)	Non-Aboriginal (%)
Agriculture and other resource-based industries	20	21
Construction	13	10
Manufacturing	5	6
Wholesale trade	2	4
Retail trade	12	11
Finance and real estate	3	4
Health care and social services	5	6
Educational services	5	6
Business services	14	16
Other	20	17

NOTES:
Source: Statistics Canada (2007)

There are limited data on occupational and industry characteristics of residents of First Nations communities. The census data (Table 17.11) show that public administration forms a sizable share of employment in the Doig River First Nation community.

Few First Nations communities in B.C. have large-scale employers within the boundaries of their Indian Reserves. The situation in the First Nations communities in the LAA is typical of most communities in the province; the band administration and First Nation health and education services are the main in-community employers. In addition, there are small construction, forestry service, and oil and gas service companies that are operated by a First Nation or by a First Nation member living in and basing their company in the Indian Reserve community. For example, the Community Profile report for Doig River First Nation stated that "Main economic activities in the community of Doig River include community administration, oil and gas work (seismic, facility construction, maintenance, first aid and safety, and reclamation), forestry, general labour, and agriculture. On-reserve labour also staffs the on again, off again convenience store, learning centre and daycare centre." (T8FNs Community Assessment Team and The Firelight Group Research Cooperative 2012a:92) and in Volume 3 Appendix B First Nations Community Baseline Reports, Part 7 Community Baseline Report and EIS Integration Summary Table for Doig River First Nation, Halfway River First Nation, Prophet River First Nation, and West Moberly First Nations.)

Table 17.11 Labour Force by Industry Group, First Nations in the LAA (2006)

Occupation	Public Administration	Services-Producing Industries	Goods-Producing Industries
Doig River First Nation	30.8	23.1	46.2
B.C. Indian Reserve communities	21.3	48.6	30.0

NOTES:

Source: Statistics Canada (2007)

17.4 Effects Assessment

The potential for the Project to affect the labour market is assessed by taking into account the potential for the Project to result in changes to the following:

- The Project's need for labour relative to the expected availability and types of skills of the persons in the LAA
- The indirect project employment calculated using the British Columbia Input-Output Model
- A comparison of the Project labour requirements against the baseline and forecast local labour supply and demand by skill category where the data are available

The first two changes address the labour demand associated with the Project's construction expenditure and are addressed together. The availability and types of skills available in the local labour force are addressed in the context of the third aspect, in which labour demand is compared to baseline and forecast labour supply.

Mitigation addresses imbalance in the labour market and the three aspects collectively.

These changes are assessed with respect to the construction phase only, as the Project's changes during operations to the Labour Market are expected to be negligible.

17.4.1 Effects Assessment – Change in Demand for Direct and Indirect Construction Phase Labour – General Population

Figure 17.4 presents person-months of direct labour by skill categories required by the Project. Approximately 71% of total person-months would involve trades occupations. Contractor supervisors would account for 18% of total person-months and BC Hydro personnel and their advisors would account for 11%. Within the trades component, operating engineers, labourers, and truck drivers would account for 60% of the person-months. The greatest number of person-months would be needed for construction of the powerhouse and related south bank structures. Construction of the Site C dam and related works would account for the second-largest labour requirement.

The average monthly construction workforce for the three main occupational categories is shown in Figure 17.5. The schedule has a seasonal profile, with higher labour requirements between April and October than between November and March. For most years, there would be, at a minimum, 500 persons working on-site during the off-peak months. Between Years 1 and 5, the number of person-months would increase each year, reaching a peak of 2,400 in September of Year 5 (This is the sum of the base labour force of 2,134 persons, plus 222 persons hired and involved in various "contingency" activities). The on-site labour force would decline after Year 6.

The person-month estimates include provision for contingency beginning in Year 4. The 2010 cost estimate contained an attribution for contingencies of $731 million to address unforeseen expenditures related to a number of work packages. In order to estimate the labour and economic effects associated with this expenditure, the contingency expenditure was assumed to have the same labour and goods/service expenditure profile as the Project. This was added to the construction schedule in equal increments over the last five years. See Volume 3 Appendix A Economic Assessment Supporting Documentation, Part 2 Project Economic Impacts: BC Stats.

Average person-months per year are also shown in Figure 17.5. The average annual value is used to estimate the Project's potential effect on the labour market addressed in the subsection that follows.

The number of jobs supported in supply and other industries in the LAA and B.C. associated with project expenditures based on 2010 Project Cost are reported in Volume 1 Section 4 Project Overview. The model traces the project construction expenditure through the economy and estimates total economic activity and employment. Details of the BCIOM results are presented in Volume 3 Appendix A Economic Assessment Supporting Documentation, Part 2 Project Economic Impacts: BC Stats.

Table 17.12 presents the indirect and induced employment that would be generated during construction within the LAA and the province. Employment effects in the LAA and B.C. would be industries supplying goods and services to the Project (indirect) and consumer industries receiving the re-spending of payroll (induced).

Table 17.12 Total Project Construction Phase Employment Effects

Year	Total Direct [a]	Indirect and Induced Employment[b]		Total Employment	
		LAA	Total B.C.	LAA	Total B.C.
Year 0	260	80	618	340	878
Year 1	818	210	1,59	1,028	2,408
Year 2	1,100	260	2,020	1,360	3,120
Year 3	1,078	280	2,29	1,358	3,375
Year 4	1,297	368	3,115	1,665	4,412
Year 5	2,066	398	2,908	2,464	4,974
Year 6	1,875	368	2,735	2,243	4,610
Year 7	1,284	268	1,864	1,552	3,148
Year 8	445	118	858	563	1,303
Total	10,223	2,350	18,005	12,573	28,228

NOTES:

[a] BC Hydro (2012a), expressed in person-years of employment

[b] Volume 3 Appendix A Economic Assessment Supporting Documentation, Part 2 Project Economic Impacts: BC Stats, Base Case Scenario

17.4.2 Comparison of Project Labour Requirements with Labour Supply

17.4.2.1 General Population

The proportion of the resident labour force taking up project employment could range from a low of 5% to a high of 20%. The lower end of the range corresponds to a strong regional demand for trades from other projects, where these projects would offer tradespeople living in the LAA better compensation and employment terms compared to the Project (T.R.A.D.E.S., Employment Councillor 2011 pers. comm.) The higher end of the range corresponds to the Project offering competitive compensation and employment terms relative to other projects.

The Project's effect on the labour market would depend on the ability of the local capacity to meet construction labour demand while staying in balance. The local capacity is defined as the number of unemployed persons within the LAA with the required skills that are in excess of the natural rate of unemployment (i.e., 5%) (BCMJTI 2011). For example, if the baseline unemployment rate in the LAA is 7% for the occupations required by the Project, then the Project could hire those occupations from the local population until its number of unemployed is equal to 5%. Local hiring in excess of 5% unemployment would give rise to adverse labour market effects such as persistent labour shortages, reduction in service levels, and delay in completing work. If the baseline unemployment rate is at or below the natural rate of unemployment, there would be no capacity in the labour supply available in the LAA to meet the Project labour demand and an imbalance in the labour market would occur.

The historical unemployment rate is low in the LAA, but it has remained above the natural rate due to the in-migration of workers from other jurisdictions. Large construction projects in the last decade have consistently demonstrated the efficiencies of the market by using mobile workers to supplement what is available locally, and

maintenance of a low unemployment rate demonstrates that local hires are typically maximized.

As stated in the baseline description, the definition of labour market capacity does not include persons that are employed. Residents in the LAA that may leave a job to take a Project job create an employment vacancy. If that position is not eventually filled by an unemployed person, then a vacancy would persist in the labour market unless an in-migrating worker relieved the labour scarcity.

The unemployment rate in the LAA during the construction phase would depend on the state of the northeast B.C. economy. Baseline information indicated that, during periods of economic expansion, the unemployment rate in the LAA has fallen below 5% and the labour force expands (as workers migrate to the region). During economic slowdowns, the unemployment rate has increased to about 9% and the labour force growth declines. Labour market conditions are dynamic, and it is reasonable to expect that during the construction phase, both local labour shortages and excesses would occur at times for specific trades and occupations.

Given this dynamic, it is difficult to forecast labour market conditions during the construction phase with a high degree of accuracy. Table 17.13 shows construction demand for labour (for years requiring average, minimum, and maximum person-years of employment) compared to the labour supply available in the LAA for the trades and trades supervisors in 2011. The available labour force is an estimate of the number of persons that could be hired by the Project, at the average unemployment rate in the LAA, before pushing the unemployment rate below 5%. Table 17.13 indicates that Project labour demand would likely exceed the labour market capacity in the LAA for all years of the construction phase.

Table 17.13 Available Labour Force and Potential Project Requirements in the LAA

Labour Force Characteristic	Crafts Supervisors	Crafts
LAA Labour Force (persons)	547 [a]	9,799 [a]
Available Labour Force	7 [b]	118 [b]
Project Requirements (person-years) [c]		
Average year	189	710
Minimum year	29	149
Maximum Year	413	1,349

NOTES:

[a] Availability based on growth in crafts supervisors (excluding BC Hydro and Engineering, Procurement and Construction Management team) and crafts categories equalling LAA labour force growth between 2006 and 2011

[b] Available labour is estimated as the number of person in excess of the 5% threshold unemployment rate. The average unemployment rate in the LAA of 6.2% is assumed, where 1.2% of the labour force is estimated to be available without putting the unemployment rate below the threshold level.

[c] BC Hydro (2012a), includes contingency

17.4.2.2 Aboriginal Peoples

An Aboriginal labour market (or sub-market) exists within the LAA, which is based on Aboriginal labour force supply and LAA-based employer demand, including employment demand generated by the Project. There are also labour markets in the LAA based on community geographies, including First Nations communities.

In Section 17.4.1 there is an assessment of the labour demand change associated with the Project's construction expenditure, including the amount (in person-years) and occupational characteristics of direct, indirect, and induced employment generated in the LAA and the province. The results of this assessment of Project-generated labour demand are directly applicable to the Aboriginal labour market, as the change in employment demand stemming from the Project potentially affects employment opportunities for members of the Aboriginal labour force.

The Project's labour demand is compared to baseline and forecast Aboriginal labour supply to assess potential effects on the Aboriginal labour market in the LAA and on the labour markets of First Nations communities in the LAA. The Aboriginal labour force, although a segment of the labour force in the LAA, has its own distinct attributes, including size of the labour force, residential location of labour force members, number of unemployed, occupational skills, educational attainment, and social and historical circumstances, as described in Section 17.3.5.

Adverse effects would occur if members of the Aboriginal labour force in the LAA were unable to access, fairly and equitably, Project employment opportunities.

As outlined in Section 17.4.2, the local capacity to help fill Project employment demand is two-dimensional; one dimension is the number of unemployed persons that comprise the residual portion above the 5% natural unemployment rate, and the other is the occupational skills capabilities of unemployed persons within the LAA. This unemployed part of the labour force with crafts skills presents the local capacity to fill a minority, an estimated 5% to 20% of the Project's crafts employment demand.

Although the Aboriginal labour force is a small proportion (approximately 10%) of the total labour force in the LAA, it has historically comprised a much higher portion, one-fifth to one-third, of the total unemployed in the LAA. From the point of view of the size of the pool of unemployed persons in the LAA, the Aboriginal labour force could fill a sizable minority of the local share of crafts employment. This contribution is subject to the Aboriginal unemployed having appropriate experience and abilities to fill these positions, including trainee positions, and having fair and equitable access to these Project employment opportunities.

The available data on the occupational skills of Aboriginal persons in the LAA (as described in Section 17.3.5.2) point to a portion of the Aboriginal labour force having certain qualifications to fill Project crafts positions. Almost 30% of the Aboriginal labour force has occupational skills that fall into the trades, transport, and equipment operators and related category. Data are not available on the occupational skills of the Aboriginal unemployed in the LAA, but if their occupational distribution is the same as for the whole Aboriginal labour force in the LAA, then, at this time, approximately 100 unemployed Aboriginal persons in the LAA may have suitable skills to fill crafts positions in the Project's labour force. This amount or capacity will vary with the number of unemployed in the Aboriginal labour force and the composition of their capabilities.

Another potential source of capacity to help fill labour demand in the Aboriginal population is the group of adults who are not currently part of the Aboriginal labour force. The 2011 participation rate of the Aboriginal labour force was seven percentage points under the rate for non-Aboriginal persons (BC Stats 2012a). If the Aboriginal participation rate was the same as the rate for non-Aboriginal persons, then there would be approximately 350 more persons in the Aboriginal labour force in the LAA. The

occupational qualifications of these persons not in the current Aboriginal labour force are not known.

The Project employment demand also presents a potential opportunity for underemployed Aboriginal persons to secure more desirable work and wages or salary, possibly in apprenticeship or operator positions. A less-qualified unemployed person could potentially fill the position they left. Movement from employment in another entity to a Project-related position could result in drawing down unemployment if a local unemployed person moves into the paid workforce as a result. This movement also contributes to improved utilization of labour capacity in the LAA.

The full or even partial realization of this potential employment in the Project's construction phase will not occur in the absence of direct efforts to address the challenges and barriers to securing and maintaining suitable employment that are faced by many in the Aboriginal labour force. There has been strong demand for labour in the LAA, which is reflected in relatively low overall unemployment rates since 2003 and the extensive sourcing of labour from outside the LAA, yet the Aboriginal unemployment rate in the LAA remains high relative to the non-Aboriginal population over this period. This set of circumstances indicates that there are employment challenges and barriers for many members of the Aboriginal labour force in the LAA, even in a situation of strong employment demand.

The Treaty 8 First Nations' Impact Pathways Report observed that "in general, there are also strong concerns by the T8FNs that even beneficial effects they do encounter are likely to be less beneficial for them than is likely for other, non-Aboriginal populations, due to a variety of built-in systemic hurdles to full engagement in the wage economy by the T8FNs and their members…There is a strong impression that outsiders and non-Aboriginal people are most likely to benefit from Site C" (T8FNs Community Assessment Team and The Firelight Group Research Cooperative 2012b:24–25) and in Volume 3 Appendix B First Nations Community Baseline Reports, Part 7 Community Baseline Report and EIS Integration Summary Table for Doig River First Nation, Halfway River First Nation, Prophet River First Nation, and West Moberly First Nations). Several similar observations about barriers faced by the Aboriginal labour force in regard to securing employment associated with the Project were made in the Site C Initial Impact Pathways Report. Another example is "Variety of systemic hurdles to maximizing T8FNs engagement in employment during construction and operations of Site C, should it proceed; lack of training, low educational status, stigma of working on this project and psycho-social effects, lack of quality work environment in primarily non-Aboriginal companies; etc.; also, relatively short-term nature of construction; what incentive is there for T8FNs to engage?" (T8FNs Community Assessment Team and The Firelight Group Research Cooperative 2012b) and in Appendix B, row 64; Volume 3 Appendix B First Nations Community Baseline Reports, Part 7 Community Baseline Report and EIS Integration Summary Table for Doig River First Nation, Halfway River First Nation, Prophet River First Nation, and West Moberly First Nations).

An adverse effect would also occur if Project demand for labour during the construction phase results in staffing gaps in the organizations and enterprises located in First Nations communities (i.e., Indian Reserve communities) due to some of their employees leaving the community to take up Project construction employment.

There is an observation in the Treaty 8 First Nations' Impact Pathways Report in regard to the Project that "…out-migration of those local people with highest business acumen

impacts on both the person leaving (loss of connection to home, subject to increased social isolation in a non-Aboriginal community) and the people left behind (family cohesion, "brain drain", reduced capacity to run community infrastructure)." (T8FNs Community Assessment Team and The Firelight Group Research Cooperative 2012, Appendix B, row 50) and in Volume 3 Appendix B First Nations Community Baseline Reports, Part 7 Community Baseline Report and EIS Integration Summary Table for Doig River First Nation, Halfway River First Nation, Prophet River First Nation, and West Moberly First Nations).

Since these small First Nations communities have high levels of unemployment and the on-reserve organizations and businesses have relatively small staffs, then many staffing gaps due to movement of persons from the employ of a First Nation community entity to an off-reserve entity associated with Project construction could be filled by unemployed on-reserve residents or by sourcing suitably qualified persons from outside the community. Employment demand in the LAA has been strong since 2003. Future employment growth in the LAA is projected to be similarly strong, as outlined in Section 17.3.4. The Project will add incrementally to this employment growth, and its contribution will vary in scale over the construction schedule. It will attract some persons from businesses and organizations based in First Nations communities, but this, in part, is the expected churn in employment when persons seek new opportunities and others fill their former positions. The Project will contribute to staffing pressures that these small communities face now and will likely face even in the absence of the project.

17.4.2.3 Summary

In summary, Project construction would require qualified persons to meet labour and scheduling requirements. The labour force in the LAA has the skills that suit the Project's trade needs, but forecasts indicate the labour force will lack sufficient numbers of suitably qualified individuals. Without mitigation, this circumstance could result in effects to businesses in the LAA who lose workers to the Project, or who face increased competition for hiring or retaining workers. Labour shortages could also slow construction activity.

The positive change in demand for labour stemming from the Project's construction phase opens up potential new employment opportunities for Aboriginal persons in the LAA, but targeted measures are needed to provide a fair and equitable pathway to accessing these opportunities.

17.4.3 Mitigation Measures – Change in Demand for Labour

With current forecasts of employment levels in the LAA continuing at or near the natural rate of unemployment, mitigation measures would focus on augmenting labour supply by:

- Recruitment, including accessing labour pools outside of the region, and attracting new entrants to the local labour force, including specific initiatives focused on Aboriginal persons
- Enhancing the local labour market participation rate and skill level of the population in the LAA, via training and skills development amongst other measures, including specific initiatives focused on Aboriginal persons in the LAA

The above initiatives should align with elements inherent in the labour market such as changing terms of employment and labour mobility, which tend toward equilibrating labour demand and supply.

17.4.3.1 Recruitment

Recruitment-focused mitigation measures would include:

- BC Hydro and its contractors would access labour markets beyond the LAA to supplement the local supply of labour
- Contractors would be encouraged to hire locally available workers with the requisite skills

The actual measures implemented will depend on the labour market conditions during construction, and will vary as conditions vary.

17.4.3.2 Local Labour Market Participation

17.4.3.2.1 General Population

Training would focus on strategies for increasing the labour force in the LAA by channelling new entrants (i.e., persons not presently in the LAA labour force and young persons just entering the labour force) to occupations expected to be in short supply, and by upgrading skills for underemployed and unemployed persons. Given the Project's skill requirements, mitigation would focus on the construction skills and trades. Specific mitigation measures include:

- BC Hydro will provide $1 million to the Northern Lights College Foundation to fund student bursaries, focusing on trades and skills training to support the development of skilled workers in the LAA (BC Hydro 2012b). BC Hydro and Northern Lights College worked collaboratively to identify the skills and trades that would benefit most from the bursary funding. The initiative benefits non-Aboriginal and Aboriginal persons alike.
- BC Hydro will enter into a three-year (2011–2014) funding agreement with Northern Opportunities, a partnership of the school districts of Fort Nelson (School District #81), Peace River North (School District #60), and Peace River South (School District #59), Northern Lights College, local First Nations, industry, and local communities, with the objective of providing young people with a seamless learning pathway from secondary school to post-secondary training, which is open to Aboriginal and non-Aboriginal students
- BC Hydro will participate in regional workforce training initiatives, such as the Northeast Regional Workforce Table Task Force, to support alignment of training programs with the need for skilled workers to meet the needs of northeast B.C.
- BC Hydro may work with its contractors and labour organizations to identify apprenticeship opportunities during construction
- BC Hydro will provide additional daycare spaces in the Fort St. John area to increase spousal participation in the labour market

17.4.3.2.2 Aboriginal Peoples

Because the overall unemployment rate in the LAA is low and forecasted to continue in this relatively tight labour market condition, and the Aboriginal population's unemployment rates are high and labour force participation rates are low in the LAA, certain mitigation measures would focus on the Aboriginal population to facilitate their participation in the Project's employment opportunities, including targeted recruitment as well as training and skills development. Where identified by Aboriginal groups as an interest, BC Hydro will consider commitments respecting capacity building, education, and training associated with Aboriginal participation in Project labour market opportunities. Specific measures include:

- BC Hydro will support training, industry, and Aboriginal partnership opportunities in the region; for example, BC Hydro in partnership with the North East Native Advancing Society (NENAS) secured funding from Industry Training Authority (ITA) to support North East Aboriginal Trades Training (NEATT), an essential skills and pre-trades training program that began its first intake in the spring of 2012
- BC Hydro will support the North East Native Advancing Society (NENAS) with $100,000 in funding over two years (2013–2014) to support trades training under its North East Aboriginal Trades Training program. The NEATT program emphasizes pre-college preparation, trade careers exploration, and personal development, as well as workplace essential literacy and numeracy skill building.
- BC Hydro will dedicate $500,000 of the $1 million provided to Northern Lights College to Aboriginal student bursaries
- BC Hydro will develop a plan for inclusion of Aboriginal persons in its Project contracted workforce, including communication of employment opportunities, and evaluation criteria for hiring and training Aboriginal persons in contractor procurement packages

17.5 Summary of Effects Assessment and Mitigation Measures

With the implementation of the above mitigation measures, the Project would maintain balance (or not exacerbate an imbalance) in the local labour market and would offer fair and equitable access to Project employment opportunities for interested members of the Aboriginal labour force in the LAA. Therefore, the Project would result in no residual adverse effect, where employment in the LAA is maximized while not putting the labour market in the LAA out of balance, and where remaining labour requirements would be sourced through non-local recruiting, and by enhancing local skills profiles and labour participation rates, including those of the Aboriginal population in the LAA.

A summary of potential effects and mitigation measures is shown for Labour Market in Table 17.14.

Table 17.14 Project Effects and Mitigation Measures on Labour Market

Project Phase	Potential Effects	Mitigation Measures	Mitigation Effectiveness	Responsibility
Construction	▪ Change in demand for direct and indirect construction phase labour ▪ A comparison of the Project labour requirements against the baseline and forecast local labour supply and demand by skill category, where the data are available	▪ Recruitment, including accessing labour pools outside of the region, and attracting new entrants to the local labour force (including mobile workers) ▪ Local labour market participation: training and skill development, focused on increasing the local labour market participation rate and skill level of LAA population ▪ Local labour market participation: provision of daycare spaces in Fort St. John area to increase spousal participation in labour market ▪ Support to Aboriginal training initiatives and students ▪ Plan to provide for inclusion of Aboriginal persons in contracted workforce	▪ The application of mitigation measures will need to be responsive to Project needs and general labour market conditions to be most effective ▪ Residual adverse effects are not expected	▪ BC Hydro in cooperation with delivery agency or partner

17.5.1 Other Mitigation Options Considered

There were no other mitigation measures considered by BC Hydro for effects on the labour market.

17.6 Residual Effects

No residual effects are anticipated following the proposed mitigation measures.

17.7 Cumulative Effects Assessment

No cumulative effects are anticipated, because no residual effects are anticipated following mitigation.

17.8 Monitoring and Follow-Up

No monitoring or follow up is proposed.

References

Literature Cited

BC Hydro and Power Authority (BC Hydro). 2012a. Summary of Workforce by Craft – According to 2010 Cost Estimate. Table B2. Vancouver, B.C.

BC Stats. 2011. Business Indicators, Trade Occupations Outlook to 2019. Victoria, B.C.

BC Stats. 2012a. Labour Force Activity by Total, Aboriginal and Non-Aboriginal Population, B.C. Development Regions, Annual Averages, 2006–2011. Unpublished data originally produced by Statistics Canada. Victoria, B.C.

BC Stats. 2012b. Aboriginal Peoples Labour Force Survey 2011. Victoria, B.C.

British Columbia Ministry of Jobs, Tourism and Innovation (BCMJTI). 2011. British Columbia Labour Market Outlook 2010–2020. Victoria, B.C.

Ipsos Reid Public Affairs. 2007. Fort St. John Employment Information Source – Labour Needs Research. PowerPoint presentation. Calgary, AB.

MNP. 2012. Barriers and Successful Approaches to Preparing and Employing Aboriginal Trades People. Prepared for Industry Training Authority. Richmond, B.C.

North East Native Advancing Society (NENAS). 2011. Annual Report 2010-2011. Fort St. John, B.C.

Northern Development Initiative Trust (NDIT). 2012. 2011 Annual Report. Prince George, B.C.

Sharpe, A., J.F. Arsenault, and S. Lapointe. 2009. The Effect of Increasing Aboriginal Education Attainment on the Labour Force, Output and the Fiscal Balance. CSLS Research Report No. 2009-3. Prepared for the Educational Branch of Indian and Northern Affairs Canada by the Centre for the Study of Living Standards. Ottawa, ON.

Treaty 8 First Nations (T8FNs) Community Assessment Team and The Firelight Group Research Cooperative. 2012a. Telling a Story of Change the Dane-zaa Way. A Baseline Community Profile of: Doig River First Nations, Halfway River First Nation, Prophet River First Nation and West Moberly First Nations. Edmonton, AB.

Treaty 8 First Nations (T8FNs) Community Assessment Team and The Firelight Group Research Cooperative. 2012b. Confidential Report. Site C Initial Impact Pathways Report, Stage 3 Report of the T8FNs Community Assessment for the Site C Environmental Assessment. Edmonton, AB.

Internet Sites

BC Hydro. 2012b. Need to Know: BC Hydro Investing $1-Million to Support Trades Training in Northern B.C. September 20, 2012. Available at: http://www.el.bchydro.com/mediabulletins/bulletin/community/tradestraining. Accessed: October 2012.

BC Stats. 2010. 2006 Census Profile(s). Revision 8. For the following Census sub-divisions; Fraser-Fort George, Peace River and Northern Rockies. Available at: http://www.bcstats.gov.bc.ca/data/cen06/profiles/detailed/choose.asp. Accessed: November 2012.

BC Stats & Statistics Canada. 2009. BC Wage & Salary Survey: Regional Estimates by Occupation, Northeast. Available at: http://www.bcstats.gov.bc.ca/StatisticsBySubject/LabourIncome/Earnings/WageSalarySurvey/WageSalarySurveySummaryTables.aspx. Accessed: November 2012.

BC Stats. No date. Aboriginal Profiles of British Columbia: 2006. Statistical Profiles by Area and Group with Emphasis on Children, Labour Market and Post-Secondary Education Issues (College Regions). Available at http://www.bcstats.gov.bc.ca/StatisticsBySubject/AboriginalPeoples/CensusProfiles/2006Census.aspx. Accessed November 2012.

British Columbia Ministry of Jobs, Tourism and Innovation (BCMJTI). No date. The British Columbia Provincial Nominee Program. Available at: http://www.welcomebc.ca/wbc/immigration/come/work/about/index.page?WT.svl=Breadcrumb. Accessed: December 2012.

Human Resources and Skills Development Canada (HRDC). 2012. Red Seal Program. Available at: http://www.hrsdc.gc.ca/eng/workplaceskills/trades_apprenticeship/red_seal/index.shtml. Accessed: November 2012.

Jobsearchonline. 2011. Hot Jobs in Fort St. John. LGC/ALF/Site C/Documentation/Reference Library/Documents/Economics. Available at: http://www.jobsearchonline.bc.ca/Hot%20Jobs/hotjobs1.htm. Accessed: September 2012.

Statistics Canada. 2007. 2006 Census, Aboriginal Population Profile. Catalogue no. 92-594-XWE. Available at: http://www12.statcan.ca/census-recensement/2006/dp-pd/prof/92-594/index.cfm?Lang=E. Accessed: November 2012.

Statistics Canada. 2009. 2006 Aboriginal Community Data Initiative. Available at: http://www.bcstats.gov.bc.ca/StatisticsBySubject/AboriginalPeoples/AboriginalReports.aspxAccessed: November 2012.

Personal Communications

British Columbia and Yukon Territory Building Construction Trades Council (BC Building Trades). 2011. Members Representative, Local 115, M. Spiruda. Burnaby, B.C. In-person interview, November 30, 2011.

British Columbia Ministry of Jobs, Tourism and Innovation (BCMJTI). 2012. Director, Labour Market and Immigration, Kerry Young. Telephone conversations and email, February 17, 2012.

Jones, A. 2011. Employment Connections, Manager. Fort St. John, B.C. In-person interview November 30, 2011.

North Peace Economic Development Commission (NPEDC). 2011. Economic Development Officers, Sandra Lemmon and Ross Kaleena. In-person interview with Lions Gate Consulting Inc. November 30, 2011.

Trades Referral Assessment, Direct Employment (T.R.A.D.E.S.). 2011. Employment Councillor, C. Koshman. Fort St. John, B.C. Telephone conversation, October 6, 2011.