APPENDIX A

Part 3 Labour Market: Additional Baseline Information

1 INTRODUCTION

This appendix summarizes labour force statistics reported by the Census for the LAA and the province up to 2006. Statistics presented focus primarily on employment, age and gender of labour force participants, education attainment, occupation and industry, salary and employment difficulty. Additional labour force data from local employment assistance centers are summarized. Based on these summaries, the general outlook for the provincial labour market is presented. The purpose of this appendix is to support EIS Volume 3 Section 17 Labour Market.

2 LABOUR FORCE INDICATORS IN THE LAA UP TO THE 2006 CENSUS

Summary statistics reported by the Census for the LAA and the province are presented in Table 1. The labour force is defined in the Census as the population 15 years or older that was either employed or unemployed. In 2006, the LAA accounted for about 1.5% of the Province's total population and 1.7% of the provincial labour force. The LAA population 15 years and older in 2006 was 49, 830 and the labour force was 38,320. The corresponding values for B.C. were 3,394,905 and 2,226,380.

An employed person is defined as a person that did any work for pay or self-employment in the week prior to the enumeration period (Statistics Canada 2006a). This would include persons temporarily absent from their job or business because of illness, vacation or labour dispute. In subsequent tables, the occupations and industry affiliations of the labour force is presented.

The participation rate is the percentage of the population active in the labour market, derived by dividing the labour force by the total population over 15 years of age (excluding institutional residents) (Statistics Canada 2006a). The LAA's participation rate is above the provincial average. The participation rates for communities in proximity to the Project (i.e., Fort St. John, Taylor and Electoral Area C) are 80% or higher, versus a provincial rate of 65.6%. The data suggests that the potential to augment the labour force by raising the participation rate (i.e., by drawing in more of the working age population) is limited.

Table 1 Labour market statistics, LAA and B.C., 2006

Area	Labour Force (persons)	Employed (persons)	Participation Rate (%)	Unemployed (persons)	Unemployment Rate (%)	Not in the Labour Force[a] (%)
LAA	38,320	36,165	76.9	2,160	5.6	23
B.C.	2,226,380	2,092,770	65.6	133,615	6.0	34
Communities						
Fort St. John	10,875	10,340	80.5	535	4.9	20
Taylor	860	840	83.9	15	1.7	17
Dawson Creek	6,220	5,840	71.9	380	6.1	28

NOTE:
[a] calculated as the number of persons not in the labour force divided by the total population over 15 years of age
SOURCE:
BC Stats (2010)

An unemployed person is defined as a person who was without paid work but who was available for work and had either actively looked for work in the past four weeks, was temporarily laid off and expected to return to work, or had definite plans to start a new job within four weeks or less (Statistics Canada 2006a). With this definition, the reported unemployed are typically persons who are between jobs. Economies that are dominated by seasonal and cyclical industries typically have higher unemployment rates.

The unemployment rate is the percentage of unemployed persons in the labour force (Statistics Canada 2006a). Generally, a low unemployment rate is a desirable outcome for both individuals and the economy. However, as noted in the discussion of thresholds in the Labour Market assessment an unemployment rate below 5% indicates a labour shortage. An unemployment rate over 7% indicates an available labour supply. At the time of the Census in 2006, unemployment rates in the LAA, RAA and B.C. were roughly in balance. Those communities nearest the potential Project site, however, were near or below the 5% threshold value.

The portion of the LAA's working age population that is not participating in the labour force is of interest as the Project could offer an opportunity for employment. Non-participants include people that were neither employed nor unemployed in the week prior to enumeration, people in an institution, students, homemakers, retired workers, seasonal workers who were not looking for work, and those who could not work because of a long-term illness or disability. Those not looking for work may also include people wanting to work and being available for work, but who did not look for work because they believed no suitable work was available (i.e., a discouraged worker). In 2006 there were 11,510 persons in the LAA of working age population who were considered not in the labour force (Statistics Canada 2006b). At the provincial level, 96% of the people not in the labour force indicated that they did not want work (Statistics Canada 2010). Of the 4% that wanted work, illness was the most common reason for not seeking work. Family matters, school and other reasons were also mentioned. Discouraged workers accounted for only .36% of those not in the labour force. Based on the provincial experience, there would appear to be few opportunities in the LAA for increasing the labour supply by increasing the participation rate.

The age and gender of labour force participants are summarized in Table 2. The LAA shows greater labour force activity and higher employment rates for comparable age

groups and gender relative to B.C. Typically, females have lower unemployment rates than males of the same age group, and the LAA's unemployment rate was generally below the rates recorded in B.C.

Table 2 Labour force Characteristics by age and gender, LAA and B.C., 2006

Labour Force Characteristic	Males		Females	
	15 to 24 yrs (%)	25 and older (%)	15 to 24 yrs (%)	25 and older (%)
LAA				
Unemployment Rate	8.4	5.3	7.9	4.6
Participation Rate	80	85.5	72	68.3
B.C.				
Unemployment Rate	11.4	4.7	10.7	5.4
Participation Rate	64.3	72.0	65.0	60.0

SOURCE:
BC Stats (2010)

Educational attainment for the LAA labour force is summarized in Table 3. The LAA has a large proportion of its labour force with less than a high school diploma relative to B.C. The proportion of the LAA's workforce with a university degree is also less than the provincial proportion. Lower levels of education attainment tend to restrict the range of employment opportunities available to the labour force and to individuals.

Table 3 Education attainment by labour force, LAA and B.C., 2006 (aged 25-64)

Educational Attainment	LAA (%)	B.C. (%)
Less than high school	22.6	12.4
High school diploma	28.2	25.9
College Diploma and trade certificates	35.8	32
University degree	13.3	30.2

SOURCE:
BC Stats (2010)

The LAA labour force can be segmented by occupation and by industry. The occupation categories are summarized in Table 4. Compared to the provincial profile, the LAA labour force has a disproportionate share of persons in trade occupations at 25% versus 15%.

Table 4 Labour force by occupation, LAA and B.C. (2006)

Occupation	LAA (%)	B.C. (%)
Total labour force (persons)	34,230	2.2 million
Management	8	10
Business, finance and administration	15	17
Natural and applied sciences and related	5	6

Occupation	LAA (%)	B.C. (%)
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

SOURCE:
BC Stats (2010)

The distribution of the labour force by industry is summarized in Table 5. The LAA has a large proportion of its labour force engaged in resource industries (e.g., oil and gas, forestry, agriculture, mining), at nearly five times the provincial proportion. The proportion of the labour force in the construction industry in the LAA is higher than it is for the province. The trade occupations are more closely affiliated with resource industries - particularly the oil and gas industry - as opposed to the construction industry (McGuire 2011, pers. comm.).

The proportion of labour force in the wholesale and retail trade industries and the accommodation and food industry are of similar magnitude for the LAA and B.C.

Table 5 Labour force by industry, LAA and B.C. (2006)

Industry	LAA (%)	B.C. (%)
Total labour force (persons)	38,120	2.2 million
Agriculture, other resource-based industries	19	4
Utilities	2	1
Construction	10	7
Manufacturing	6	8
Wholesale and retail trade	15	15
Transportation & warehousing	7	5
Accommodation and food	7	8
Finance and real estate, scientific, management, info & culture industries	13	21
Health and education, arts	12	16
Other services, public administration	9	10

SOURCE:
BC Stats (2010)

3 LABOUR FORCE INDICATORS SINCE THE 2006 CENSUS

Figure 1 shows the growth in provincial and LAA labour force over the past 15 years. In 1995, the LAA's labour force numbered 34,800 persons, or about 1.8% of the B.C. labour force. While the LAA's labour force has been growing, increasing by about 5,000

persons (14%) in the 15 year period, it has been increasing at a slower pace than the provincial labour force.

The construction labour force in the LAA showed greater variance and higher overall growth than the total labour force. The construction labour force increased from about 2,000 persons in 1995 to approximately 4,000 in 2010. There was variation in the number of persons in the construction labour force however, with peaks occurring in 1998, 2002 and 2007, followed by declines. The reduction of 455 persons in the LAA construction labour force (or about 25%) in 2008 coincided with the provincial economic slowdown. The majority of these jobs were regained by 2010.

Provincially, the construction labour force declined between 1995 and 2003. After 2003, the provincial construction industry grew strongly till 2008.

Figure 2 shows the annual average unemployment rate for B.C. and the LAA between 1995 and 2010. There was year to year variation in unemployment during this period but in most years unemployment was less than the provincial rate. The average unemployment rate in the LAA over the 15 year period ending in 2010 was 6.2%, compared to 7.3% in B.C.

The 5% unemployment threshold value is also highlighted, below which tight labour market conditions are assumed to prevail. The LAA unemployment rate was below this threshold in 1998 and 2005 and 2008. The slowdown after 2008 is evident by an unemployment rate higher than 5%. The unemployment rate for the B.C. construction industry is also shown in Figure 2. Given the seasonal and project oriented nature of construction work, it might be expected that the natural rate of unemployment would be higher for the construction industry than it was for the economy as a whole. However, between 2005 and 2008, the provincial construction industry labour force was at or exceeded full employment.

A survey of LAA employers conducted by Statistics Canada in April 2009 provides information about employment conditions for the major occupational categories (BC Ministry of Advanced Education and Labour Market Development 2009). The results of the survey and comparison to provincial values are summarized in Table 6. The provincial and LAA economies were in the midst of an economic slowdown at the time the survey was completed.

With respect to hourly wage rates, the highest rates were in the trades category. The LAA's hourly wages were equal to or higher than corresponding occupations provincially. The survey also found longer work weeks for most occupations in the LAA than the province.

The survey investigated the potential labour surplus or scarcity by occupation class by asking employers whether they were having difficulty filling positions and length of time vacant positions were advertised. The results indicated that LAA employers experienced the greatest difficulty hiring persons in the Sales and Service Occupations. LAA employers hiring tradespeople indicated fewer difficulties than for the province as a whole. For a number of the occupations, employers had advertised vacant positions for longer than four months, an indication of limited labour supply. Where employers indicated they had little difficulty in hiring (e.g., heavy equipment operators) but had been advertising the position for more than four months the issue was high turn-over rates rather than the ability to fill the position.

Table 6 Salary and employment difficulty by occupation LAA AND B.C.

Occupations	Full-time hourly ($CDN)		Hiring difficulties (% of labour force)		Vacancies > 4 months (% of labour force)	
	LAA	B.C.	LAA	B.C.	LAA	B.C.
Management Occupations						
Retail Trade Managers	26.20	21.44	2.9%	3.9	19.1	16.2
Business, Finance & Administrative Occupations						
Administrative Officers	30.59	33.68	2.7	2.8	14.5	8.2
Bookkeepers	24.58	21.12	0.0	1.6	10.4	8.0
Secretaries (Except Legal and Medical)	19.75	19.29	4.4	1.5	22.5	12.5
General Office Clerks	18.09	19.17	0.0	2.1	21.5	14.6
Occupations in Social Science, Education, Gov't Service & Religion						
Community and Social Service Workers	19.75	18.83	34.5*	18.8	34.5*	50.9
Sales & Service Occupations						
Cooks	14.17	13.19	26.2*	17.7	62.9*	51.6
Retail Salespersons and Sales Clerks	20.71	14.61	6.7	8.8	52.1	28.9
Food and Beverage Servers	10.44	10.15	18.5*	10.8	63.0*	29.0
Cashiers	12.54	11.51	13.6	11.9	70.3	35.5
Grocery Clerks and Store Shelf Stockers	12.78	12.65	12.4	7.3	60.2*	37.4
Light Duty Cleaners	13.02	15.24	12.9	7.8	51.0*	31.6
Trades, Transport & Equipment Operators & Related Occupations						
Welders and Related Machine Operators	34.64	27.91	3.2	10.6	7.9	22.6
Carpenters	29.48	24.51	0.0	4.0	15.1	19.0
Construction Millwrights and Industrial Mechanics (Except Textile)	30.97	32.79	5.8	6.3	11.6	11.8
Heavy-Duty Equipment Mechanics	29.65	30.85	0.0	13.6	22.2	22.8
Automotive Service Technicians, Truck and Bus Mechanics and Mechanical Repairers	29.75	25.67	14.0	6.5	56.1	28.9
Truck Drivers	25.23	23.11	4.6	7.9	47.1	28.8
Heavy Equipment Operators (Except Crane)	26.97	25.40	0.0	3.0	23.8	24.1
Material Handlers	17.31	18.92	5.6	4.8	28.4	22.9
Construction Trades Helpers and Labourers	22.73	20.51	14.8	8.8	21.5	29.6
Occupations Unique to Primary Industry						
Oil and Gas Drilling, Servicing and Related Labourers	23.34	NA	0.0	NA	19.5	NA
Petroleum, Gas and Chemical Process Operators	30.55	NA	0.0	NA	86.9	NA
Labourers in Wood, Pulp and Paper Processing	23.98	NA	0.0	NA	21.3	NA

NOTES:
* interpret with caution.
NA: not available
SOURCE: BC MINISTRY OF ADVANCED EDUCATION AND LABOUR MARKET DEVELOPMENT (2009)

Other surveys carried out at different points of the economic cycle and interviews completed for this assessment provide further insights into local labour market conditions.

A survey of Fort St. John businesses and persons in the labour force conducted in late 2007 found strong agreement among respondents that Fort St. John was experiencing a labour shortage (Ipsos Reid Public Affairs 2007). The construction industry was second only to the services industry, with 93% of the respondents indicating the industry was facing a shortage of suitably qualified workers. Relative to the preceding 12 months, the shortage had become more acute, and there was a general expectation this situation would continue. In terms of filling existing and newly created positions, construction firms had the most success recruiting from the Fort St. John area. After that, they found equal success recruiting from the rest of B.C. and from Alberta. The construction industry was distinctive for its success in recruiting workers from Atlantic Canada. Community infrastructure issues (such as housing and community amenities) were identified as barriers to recruitment and retention of employees for all industries.

The survey found that trades and technical vacancies in the construction industry were the most challenging positions to fill. These occupations accounted for about 65% of the construction industry workforce. The vacancies consisted of two-thirds replacement positions (i.e., turnover) and one-third new positions. Among industries, firms in the construction industry experienced the highest turnover rate, losing about 15 employees per company over the previous year. The next highest turnover rate was experienced by firms in the retail and hospitality industry with an average of 13.8 employees per establishment leaving in the preceding year. In the oil and gas and forest industries, turnover rates were about six employees per year.

Tight labour market conditions eased in 2008 as a consequence of the economic slowdown beginning in mid-2008. An increasing number of job seekers visited employment agencies. While those looking for work did include some tradespeople, most of the job seekers had entry level skills and faced other barriers to employment. These persons were the last hired when the economy was growing strongly, and were among the first to be let go as businesses slowed down (Jones 2011, pers. comm.). For trades people, the labour shortage in the Fort St. John area remained essentially unaffected by the economic slowdown. For instance, most of the skilled trades people whose jobs were terminated when the wood processing facilities closed in Chetwynd and Fort Nelson in 2008 found new employment within about a week (McGuire 2011, pers. comm.). This relatively short period for finding new work was due to trades people working across a number of industries combined with active hiring by the oil and gas sectors in B.C. and Alberta. Employers have a relatively easier time filling lesser skilled positions (e.g., labourer positions) but these are typically seen as entry positions to acquire training, perhaps leading to a trades skill.

The union representing the Operating Engineers (the largest single trade involved in constructing the Project) had about 500 members living in the LAA in 2011. About 50 are working outside the LAA, and there are a total of about 650 members working in the LAA (Spiruda 2011, pers. comm.). About half of the members are working 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.

Additional insights into the unemployed in the LAA are available from local employment assistance centres. The data presented is summarized from interviews with operators of Employment Connections and TRADES employment assistance centres in FSJ and Dawson Creek. In 2011, in an average month, about 300-500 persons visited the Fort St John office of TRADES and about 1,000 visited the Employment Connections office. About 75% of the visitors are local residents looking to change jobs, or are out of work. The remainder are transients, with the majority being residents from southern B.C. The majority are male, with about 30% of them 25 years or younger and about 70% are 40 years or younger. Many of the clients to these offices are seeking entry level positions. Most work-ready persons find employment within a week, particularly tradespeople and skilled occupations where there are typically on-going vacant positions. Employment barriers such as personal issues, drug or alcohol abuse are the main reasons for persons being unemployed for longer (Jones 2011, pers. comm.).

The LAA has recovered from economic slowdown during 2008-2009 and is experiencing tight labour market conditions. 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). A large proportion of the 600 trades jobs required to re-tool the Canfor mill were filled by in-migrants as the resident tradespersons were employed on other projects. Most of the positions were filled by B.C. residents located in southern B.C. where employment opportunities are more limited. Some positions were filled by persons from Ontario and the Maritime provinces (Koshman 2011, pers. comm.).

Service industry employers (i.e., accommodation and food, and retail trade industries) are also experiencing high turnover in the relatively low pay entry level positions. In some cases employers are relying on temporary foreign workers to fill positions (Jones 2011, pers. comm.).

The existing tight labour market in the LAA is attributed to relatively high levels of activity. The attractive wage and benefit packages, and frequency of overtime offered by the oil and gas industry has attracted a large number of resident tradespeople. This includes development work in the Horne Basin and the development of shale gas fields in the Montney. Many of the construction trades (e.g., welding, machinery operators, carpentry, and truck drivers) are also in demand by oil and gas service companies. Furthermore, the attractive entry level positions in oil and gas has drawn persons away from the four year apprenticeship programs required to acquire trade credentials (Koshman 2011, pers. comm.).

An indicator of skill shortages and surpluses is the number of “help wanted” ads by occupation. In 2008 there was a total of 2,036 job vacancies advertised with employment service organizations located in Fort Nelson, Fort St. John, and Dawson Creek (Jobsearchonline 2011). In 2009, there were 974 vacancies advertised, reflecting the general economic slowdown. However, employment rebounded in 2010, with 2,909 vacancies advertised in the region, and a total of 3,795 jobs for the first 11 months of 2011 (Chute and Mayoh 2011, pers. comm.). Service industry job vacancies (retail sales, food and beverage servers, general office) have followed this general trend, with 2010 vacancies substantially above vacancies in 2009, but below those of 2008 peak. Trades job vacancies also declined sharply in 2009, but in 2010 had equaled or exceeded the previous peak values of 2008 for key trades (i.e., truck drivers, heavy duty mechanics, machine operators, construction trades and labourers). The demand for certain trades continues to be strong. The greatest number of job postings in Fort St.

John in July 2011 was construction trades, heavy duty mechanic, heavy construction operator, retail sales and truck driver (Jobsearchonline 2011).

4 OUTLOOK

The general outlook for the provincial labour market is a growing scarcity of workers, driven mainly by an aging labour force, resulting in a large proportion of job vacancies that are replacement positions. In northern B.C., major resource projects in mining, oil and gas, energy and infrastructure will create new short and long term employment positions, as well as expected growth in the provincial economy.

Between 2010 and 2020, 18,000 job openings are forecast for the LAA, with 60% of these openings forecasted to fill existing positions that become vacant and the remainder being new job opportunities (BCMJTI 2011). The occupations with the largest number of expected job openings are trades and administrative occupations. These positions would be filled by new market entrants, with a growing number of mobile workers particularly in the medium term to meet labour market needs. This job outlook includes the Project's labour requirements in 2012-2020 time frame (based on report in the Major Projects list at the time the forecast was prepared) as well as the construction of the Cabin Natural Gas Extraction Plant (Phase 1) in the 2011-2013 period (BCMJTI, Director, Labour Market and Immigration 2012 pers. comm.). The timing of labour needs is based on project information available to the Ministry at the time the forecast was being prepared. While the timing is not entirely accurate, the forecast is helpful in illustrating the nature and capacity of the labour market's response. More recently announced projects not explicitly included in the forecast but likely to go to construction in the next decade include several liquefied natural gas plants in Kitimat, the ship building work contracted to Seaspan Marine Corporation Ltd. and a number of mines in the LAA and northern B.C. Collectively these projects would be competing for the same trades and occupations as that of the Project.

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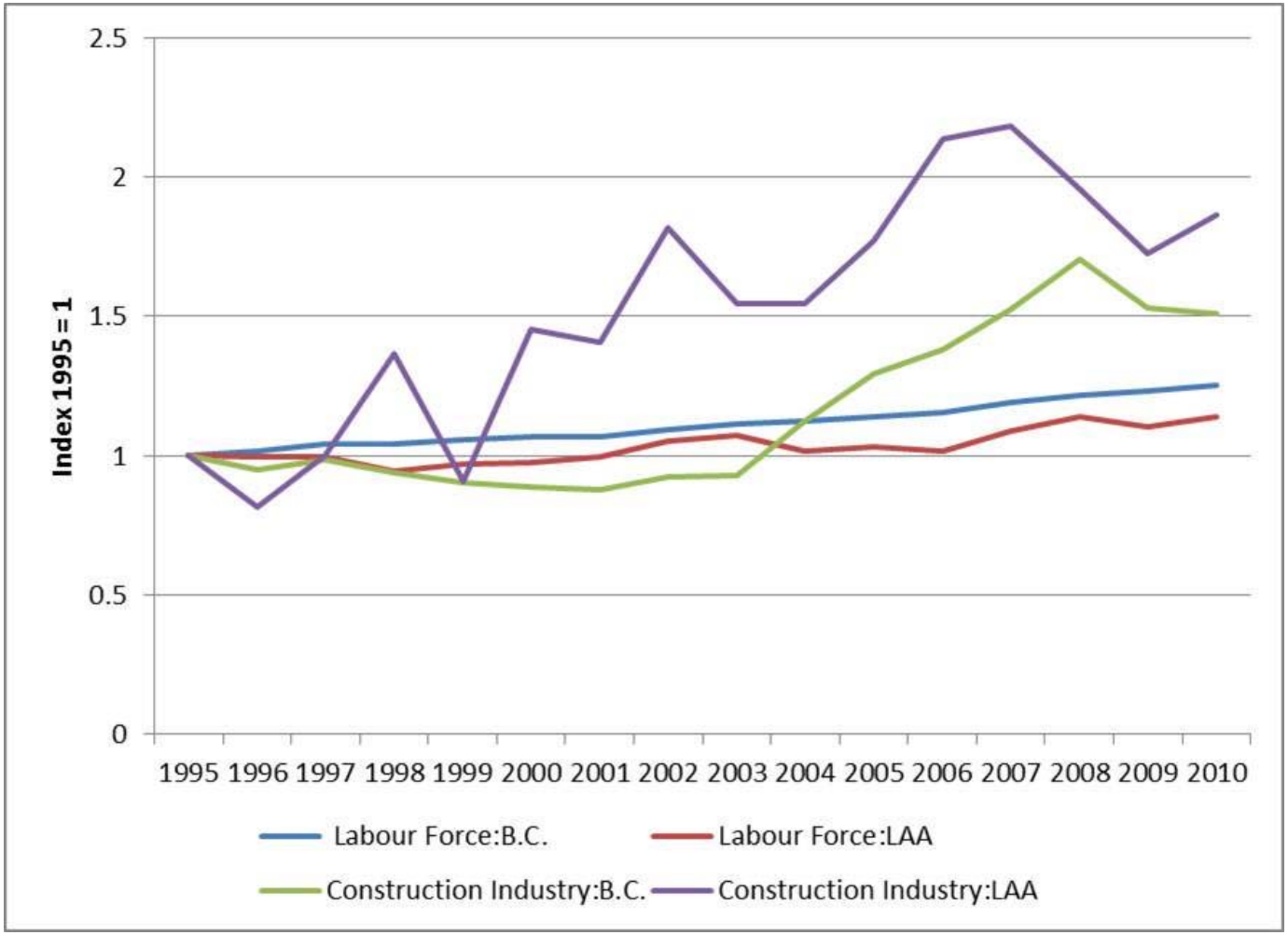


NOTES:

THE INDEX VALUE FOR EACH VARIABLE IS COMPUTED AS THE VARIABLE'S ANNUAL VALUE DIVIDED BY ITS VALUE IN 1995. THE INDEX SHOWS THE RELATIVE CHANGE AMONG THE VARIABLES AS A BASIS OF COMPARISON.

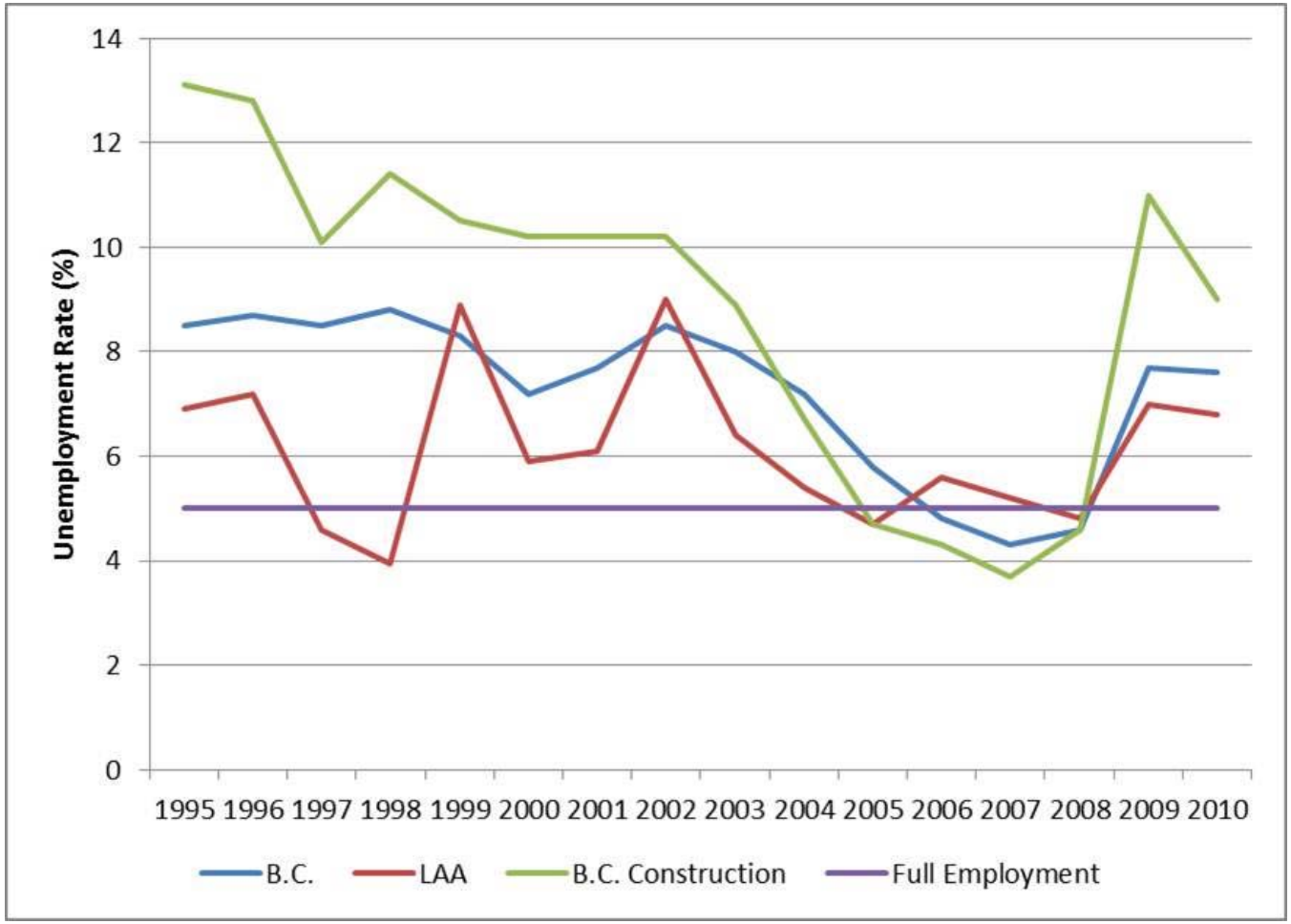
SOURCE: STATISTICS CANADA (2011)

BC hydro

SITE C CLEAN ENERGY PROJECT

Figure 1 Changes in labour force, 1995 - 2010

Construction of the Site C Clean Energy Project is subject to required regulatory approvals including environmental certification



NOTES:
SOURCE: STATISTICS CANADA (2011)

BC hydro

SITE C CLEAN ENERGY PROJECT

Figure 2 Unemployment rate,1995-2010

Construction of the Site C Clean Energy Project is subject to required regulatory approvals including environmental certification