SECTION 3

ECONOMY

KEEYASK

Hydropower Limited Partnership

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3.0 ECONOMY

3.1 INTRODUCTION

This section addresses effects of the Project on the economy, and responds to Sections 8.3 (Existing Environment) and 9 (Environmental Effects Assessment) of the Final EIS Guidelines for the Project, as issued by the Canadian Environmental Assessment Agency in March 2012 (CEAA 2012).

Economic activities affect the material well-being of people, as well as other factors that impact society as a whole (Vanclay 2002). Material well-being and other economic factors relate to the prosperity of individuals, families and communities. These represent aspects of social well-being or quality of life (Vanclay 2002). Community goals and plans often focus on improvements to local and regional economic activities, from employment and business opportunities to quality of life and other social aspects. Economic activities also reflect the culture, traditions and values of a community.

As Vanclay (2002) points out, the key social effects of a proposed project are likely to vary from one project to another, with the relative importance of each varying depending on the community in question, as well as different groups within a community. As such, a comprehensive checklist of effects of any kind, including economic effects, is not desirable. Instead, Vanclay (2002) and other practitioners (Lockie 2001; Lee 2005) emphasize the importance of community participation in the process of determining the factors that should be considered during the assessment process.

Public consultation and engagement, as well as the Keeyask Cree Nations (KCNs) community-based research programs, including interviews with local residents and stakeholders, were important in developing an analysis of the economy and the assessment of effects on the economy due to the proposed Project. These processes of consultation and engagement were particularly important in negotiating agreements between Manitoba Hydro and the KCNs partner communities, which included considerable focus on local and regional economic effects.

In addition, as background research for the assessment, the Environmental Assessment (EA) Study Team reviewed a number of environmental impact statements (EIS) from recent projects as well as regulatory guidelines for project proponents to follow in order to evaluate best practices related to assessment of effects on the economy (from a methodological perspective). The reviewed projects included the Mackenzie Valley Gas Project (Imperial Oil *et al.* 2004), the Eastmain-1-A and Rupert Diversion (Hydro-Québec 2004) and the Lower Churchill Falls Hydro Project (Nalcor Energy and Newfoundland and Labrador Hydro 2009). While each of these projects developed a unique approach to economic effects assessment, the topics that these EISs and regulatory guidelines addressed employment and income, procurement and business opportunities, business capacity, locally negotiated agreements and arrangements with communities, economic spin-offs (including local and regional economic development proposals), training initiatives, analysis of cost of living and participation in the resource economy (including traditional resource use activities).

Based on the case study analyses noted above, recent experience from the Wuskwatim Generation Project and consultations with the KCNs communities, this section considers the effects of the Project on economic activities in the Socio-Economic Local Study Area and the Socio-Economic Regional Study Area, including the following topics for the valued environmental components (VEC) of economy:

- Employment and training (during the construction and operation phases);
- Business opportunities;
- Income (during the construction and operation phases);
- Cost of living; and
- Resource economy.

The Project has the potential to positively affect, in a material way, the economy of the Local Study Area communities and, to a lesser extent, the economies of other communities located in the Regional Study Area. The magnitude and nature of these effects differ between the construction and operation phases. The Project is expected to create substantial employment, business activity and income within the Local Study Area and Regional Study Area during the construction phase. Effects during the operation phase are expected to be localized to Gillam and the KCNs communities, which may take advantage of operation jobs.

This section is divided into the following three main sections:

- Approach and Methodology (Section 3.2);
- Environmental Setting (Section 3.3); and
- Project Effects, Mitigation and Monitoring (Section 3.4), including consideration of residual effects.

Each section includes, where relevant, consideration of the Local Study Area (including the KCNs, Gillam and Thompson) and the Regional Study Area.

3.2 APPROACH AND METHODOLOGY

This section describes the approach and methodology used to assess the effects of the Keeyask Generation Project (the Project) on the VECs examined in this section. The methodologies used varied among VECs and between the construction and operation phases. Some methodologies were complex, such as the employment analysis, which used an elaborate employment supply/demand model, while others were straightforward, such as business opportunities analysis, which relied on allocations of Direct Negotiated Contracts (DNCs) prescribed in the Joint Keeyask Development Agreement (JKDA). Selection of appropriate methodologies also considered the nature and quality of data required for the analysis. The approaches selected were built on pathways of effect that connect relevant features of the Project to the socio-economic environment in which the Project would occur.

3.2.1 Employment Opportunities

3.2.1.1 Construction Phase Employment

Construction of the Project will require a large, skilled workforce comprised mainly of designated trades (*e.g.*, apprentice and journeymen carpenters and electricians) and non-designated trades (*e.g.*, truck drivers and heavy equipment operators), along with construction support occupations (*e.g.*, caterers and security personnel)[1][2][3]. Filling the job opportunities arising from these workforce requirements presents an opportunity to reduce unemployment during the construction years and expand skills in the Manitoba labour force, in particular the northern Aboriginal labour force.

- The construction employment analysis focuses on determining the extent to which Project employment opportunities would flow to three groups in the Local and Regional Study Area. Each group has employment needs and has been targeted for pre-project training and preferential hiring for Project construction jobs. Effects of direct employment on the Project will be most pronounced for these groups: KCNs Members: that is, Members of the four First Nations in the vicinity of the Project that are partners in the Project's development and operation;
- Aboriginal residents of the communities located along the Churchill, Burntwood and Nelson (CBN) River systems that have been affected to some degree by past hydroelectric development (the boundaries of this area are defined in Section 12.1.1.3 of the Burntwood/Nelson Agreement (BNA), which is the collective agreement governing the Project); and
- Aboriginal residents of the Regional Study Area, as defined in the BNA.

The CBN area and northern Manitoba are defined in the BNA Schedule D, which is shown in Figure 3-1 (Hydro Projects Management and Allied Hydro Council of Manitoba 2009). The locations of the KCNs communities are also provided on this map.

As well, the Project is of sufficient size that it can positively and noticeably affect the Manitoba and Canadian economies through the purchase of materials and equipment, labour supply, payments to the Provincial and Federal governments (*e.g.,* payroll tax, personal income tax, fuel tax and provincial sales tax) and re-spending of employment wages and other Project-related income. These effects are presented in a later section that covers the full range of economic effects on Manitoba's and Canada's economy (Section 3.4.1.12).

[1] Designated trades are governed by regulations under provincial legislation that describe the standards and conditions for training in specific trades, including how to become an apprentice, curriculum content and certification or accreditation protocols.

[2] Non-designated trades are skilled occupations that are not governed by regulations under provincial legislation.

[3] Construction support trades represent the remaining occupational categories that fall outside of the designated and non-designated trades.

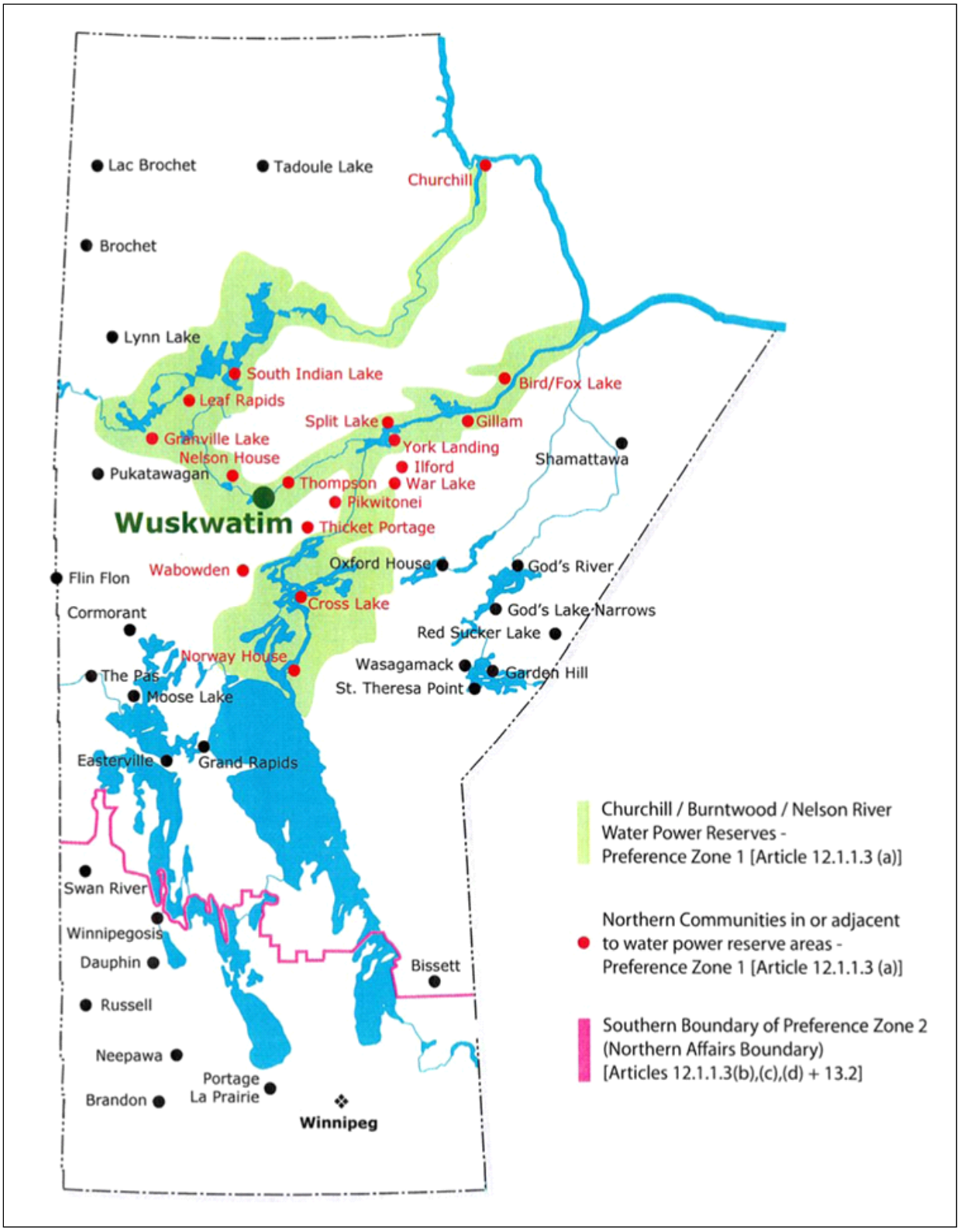

Figure 3-1: BNA Schedule D - CBN Area and Northern Manitoba Boundaries

Qualified members of these three groups, along with northern union members, have been targeted for preferential treatment with respect to employment and training for the Project[1].

The Project construction employment opportunities analysis model was developed to estimate the participation of KCNs, CBN and northern Aboriginal people in Project construction employment opportunities. Key aspects of this model included the following:

- Matching Manitoba Hydro's estimated labour demand with estimates of KCNs, CBN and northern Aboriginal labour supply on a quarterly basis to characterize potential Project employment;
- Consideration of the role of DNC and tendered contract (TC) hiring preferences and processes in the matching process;
- Analysis that took into account known challenges impeding participation in Project job opportunities (*e.g.*, availability for employment once a job order is initiated); and
- Analysis of KCNs effects that included all of the KCNs communities combined. To the extent that community specific labour force information was available, this information was used to inform development of the model, in particular the analysis of factors or challenges that may limit employment.

The remainder of this section provides an overview of the model's methodology and assumptions.

The model was comprised of three components:

- Supply;
- Demand; and
- Matching.

3.2.1.1.1 Labour Supply

The Supply portion of the model estimated future labour supply levels by occupation for people who fall into the KCNs, CBN and northern Aboriginal hiring preference categories. The model considered:

- People already in the workforce; and
- Trainees who completed courses or programs of the pre-Project training program (the Hydro Northern Training and Employment Initiative or HNTEI) (see Section 3.3.1.1 for details on this program), established to provide training to KCNs Members and other northern Aboriginal people in anticipation of construction employment on the Wuskwatim and Keeyask generation projects[2].

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[1] The term "qualified" is used to refer to candidates for employment who meet or exceed training, accreditation, skill and experience stipulated in a Contractor's job order (Section 12.1.1 of the BNA).

[2] The Wuskwatim Generation Project is a 200 MW facility currently under construction. The project represents a partnership between Manitoba Hydro and Nisichawayasihk Cree Nation. Construction began in 2006 with completion anticipated in 2011.

Labour supply projections were made for each of these categories using the following data sources:

- **2001 Census Data:** Data on the occupational skills of northern Aboriginal people were used to establish the number and occupational mix of people already in the workforce. The year 2001 was the most recent year for which complete labour force and employment data were available for the Local Study Area. The 2006 Statistics Canada census data were incomplete and 2011 data were not available when the EIS was being prepared. These data represent a relatively complete source of occupational information for Aboriginal residents of the Regional Study Area. These data were available for the entire northern Aboriginal population only, and not by community or other breakdowns. Furthermore, primary data about community labour supply, including for the KCNs communities, were not available at the time when this study was being prepared. These limitations meant that labour supply data for the CBN area and the KCNs communities were derived using a pro-rating method on the basis of their share of the northern Aboriginal population. For example, according to the 2001 census, KCNs Members, including those living on- and off-reserve, comprised 8% of the Regional Study Area's Aboriginal population. Similarly, the Aboriginal population of the CBN area, including the Aboriginal populations of Thompson and Gillam, made up 33% of the Regional Study Area's Aboriginal population in 2001[1]. For example, if there were 100 northern Aboriginal journeyman carpenters in 2001, the estimates would be that 33 were residents of the CBN area and eight were Members of the KCNs communities.
- **Hydro Northern Training and Employment Initiative Data**: These data were used to establish the number, skill level and occupation of trainees of the HNTEI program. This program started in 2002 and continued through to March 2010. The employment model incorporated HNTEI data regarding trainees who completed courses or programs to the end of March 2010. Projected census data were used to forecast new entrants to the labour force from 2010 (after the HNTEI program ended) until completion of the Project.

These data sources were combined to create a workforce profile for the KCNs, CBN and Aboriginal residents of the Regional Study Area. The model calculated how the workforce for each group would change through time. Age distribution data from Statistics Canada were incorporated into the model to "retire" workers once they reached age 65 and added new entrants once the HNTEI program ended. The model also made assumptions about the rate at which apprentices would be able to advance to journeymen positions[2].

[1] This assumption was made by comparing available 2001 INAC data regarding off-reserve KCNs members with the Aboriginal populations of Gillam and Thompson provided by 2001 Statistics Canada data. Further analysis indicated that approximately 80% of off-reserve KCNs Members resided in the CBN Area. This represented about one-third of the total KCNs population. The 2001 data were chosen because of problems identified in the 2006 data set for Aboriginal communities in the Regional Study Area: that is, there were data suppression and data quality challenges.

[2] The employment model provides for modest progression of HNTEI trainees to increasing skill levels in the occupations for which they are hired.

3.2.1.1.2 Labour Demand

The demand portion of the model contained estimates by year and occupation of workforce requirements for the Project, based on data provided by Manitoba Hydro. The analysis was based on the 2010 version of the workforce requirements. In the analysis, the Project job categories were placed into four groupings:

- Construction support (*e.g.*, caterers);
- Non-designated trades (*e.g.*, heavy equipment operators);
- Designated trades (*e.g.*, carpenters); and
- Manitoba Hydro and contractor supervisory positions.

Other employment opportunities, although small in number relative to these estimates, are expected to be available. While not included in the modelling, these are added separately into employment analysis and include opportunities associated with the KCNs Future Development (or Implementation) offices, community consultation support and others.

3.2.1.1.3 Labour Supply/Demand Matching

The matching portion of the model compared demand estimates with supply estimates by job category on a quarterly basis, based on the hiring preferences for job-qualified Aboriginal residents of the KCNs communities, the CBN area and the Regional Study Area; these hiring preferences were set out in the BNA and the JKDA.

Relevant BNA and JKDA provisions are as follows:

- Construction employment for the Project is governed by the BNA. The BNA is the collective agreement between the Hydro Projects Management Association and the **Allied Hydro Council of Manitoba** that applies to construction of northern hydroelectric projects, including the Wuskwatim Generation Project and Keeyask Generation Project. The agreement identifies various approaches to hiring northern Aboriginal residents for TCs and DNCs. The BNA also sets out hiring preferences for other workers.
- As noted in Section 1, the JKDA is the agreement among Manitoba Hydro and the KCNs communities that established the Keeyask Hydropower Limited Partnership (the Partnership) and governs how the Project will be jointly planned and developed. The JKDA provides a working framework for implementing aspects of the BNA. In addition, the JKDA includes the details with respect to hiring preferences for KCNs Members working on DNCs. The JKDA was intended to clarify the following:
    - The BNA and JKDA hiring preference provisions, which were designed to increase employment among northern Aboriginal people, particularly among KCNs Members and residents of the CBN area;
    - DNCs, which are targeted toward KCNs contractors, could follow the direct-hire process allowed for in the BNA; and

- Hiring under the TCs, excluding contractor supervisors, would follow a job-order process specified in the BNA.

Section 2.9 of the BNA specifies that northern Aboriginal businesses that are engaged in DNCs could directly hire northern Aboriginal residents for their workforce. This provision would apply to the DNCs offered to KCNs businesses and to joint ventures in which KCNs organizations or Members maintain majority ownership. These contracts are expected to account for about 36% of contract employment (not including Manitoba Hydro or contractor supervisory employment). Once the supply of qualified northern Aboriginal workers has been exhausted under Section 2.9 of the BNA, employment opportunities must be filled using the job-order process (Section 12.1.1.3 of the BNA) (Hydro Projects Management and Allied Hydro Council of Manitoba 2009).

The job-order process for TCs identifies and recommends qualified job applicants according to the preference hierarchy. Employment Manitoba, a branch of Manitoba Entrepreneurship, Training and Trade, will be responsible for maintaining the referral database, in conjunction with local organizations in the CBN area. Tendered contract contractors who require on-site employees will be required to submit job orders to Employment Manitoba, which will refer any job-qualified candidates directly to the contractor. The job referral service will be required to verify each candidate's qualification and status as a CBN resident (as defined in Section 12.1.1.3 of the BNA), a northern Aboriginal person, a northern resident or as a union member, as appropriate. Candidates for employment on TCs will be referred according to the following sequence:

- **Northern Aboriginal residents of the CBN Area:** Section 13.1 of the BNA defines a northern Aboriginal person as "status Indians, Metis, non-status Indians and Inuit who qualify as Northern residents in accordance with the definition set out in Article 13.2";
- **Northern residents (unionized):** Any northern Aboriginal or non-Aboriginal resident who is a member of a local union;
- **Northern Aboriginal person:** Any northern Aboriginal person (as defined by Section 13.1 of the BNA); and
- **Northern resident**: Any northern Aboriginal or non-Aboriginal resident (Hydro Projects Management and Allied Hydro Council of Manitoba 2009).

The main exclusions from these hiring provisions include Manitoba Hydro and contractor supervisory positions, which account for about one-quarter of the total construction workforce.

Any employee covered by the BNA would be required to belong to a union while employed on the Project. These employees receive the benefits of the BNA and are subject to the conditions set out in the agreement. Section 2.2 and 12.3.1 of the BNA exclude Manitoba Hydro staff and contractor supervisory positions from union membership (Hydro Projects Management and Allied Hydro Council of Manitoba 2009).

Section 13.1.6 of the JKDA further elaborates on how the direct-hire provisions for DNCs would be implemented through the following preference hierarchy:

- First preference to qualified Members of the KCNs that the contractor represents;
- Second preference to qualified Members of the remaining KCNs; and
- Third preference to other northern Aboriginal residents.

In matching the workforce demand to available supply, the following steps were followed:

- KCNs labour was first assigned to DNC employment; remaining DNC employment was assigned to northern Aboriginal residents[1].
- For TC jobs, Aboriginal residents of the CBN area were given first preference. Therefore, any KCNs labour not required for DNCs was assigned to TC employment along with all other available CBN labour supply (the model allocated employment equally to both KCNs Members and CBN residents based on the available supply from each group).
- Remaining TC employment was then assigned to available northern Aboriginal labour.
- Any unallocated employment opportunities were then attributed to other sources of labour, which could include non-Aboriginal workers in the Regional Study Area or workers from elsewhere in Manitoba and Canada.

The total number of apprentices required for the Project was determined according to the ratios outlined in the BNA that define how many journeyperson/experienced workers would be required for each apprentice/entry-level workers. The matching process was performed at both the journeyperson/experienced level and at the apprentice/entry-level of worker, for each of the job categories identified for the Project and for each quarter of the construction period.

3.2.1.1.4 Analysis of Challenges Affecting Employment

Analysis of factors or challenges that may limit participation levels in Project construction opportunities by the KCNs, CBN and northern Aboriginal labour force was also included in the employment supply/demand model. These potential challenges were identified by KCNs participants during community-based research programs and community engagement processes undertaken to prepare this Socio-Economic Impact Assessment (SEIA), and through experience on the Wuskwatim project currently under construction[2]. Based on this input, the model was expanded to include the following

[1] This differs slightly from the process outlined in the BNA whereby first preference would be given to KCNs Members that the contractors represent. It was not possible to achieve a breakdown of supply by each specific First Nation.

[2] It should be noted that experience from the Wuskwatim project is particularly relevant since it is currently nearly constructed and used a comparable employment approach as has the Project with the use of the job referral system, application of the BNA and similar employment preferences.

three factors that could affect employment participation levels by KCNs, CBN and northern Aboriginal workers.

Attraction: Many will be attracted to work at the Project construction site based on the nature of the work, high wages, opportunities for overtime, and free room and board at the construction camp. However, it is also expected that a sizeable portion of the KCNs, CBN and northern Aboriginal labour force will not be interested in pursuing Project construction jobs for a variety of reasons. These could include employment elsewhere, a lack of comfort with the construction work environment, not wanting to be away from family and friends, or a lack of awareness about Project opportunities or how to apply for these opportunities. As a result, the pool of workers considered potential candidates for Project employment is less than the overall available labour force in these areas.

Availability: For those who are interested in work on the construction site, there are factors which may limit their availability to take advantage of these opportunities. These could include the extent to which a candidate maintains their status in the job referral system (there is a need to renew status every 6 months or the profile is considered dormant), the ability of the contractor to contact a referred candidate, a candidate's interest in the specific job opportunity once contacted, and the ability of the candidate to make arrangements to get to the job site.

Qualifications: There are circumstances where a referred worker appears to be qualified for a Project opportunity, but does not actually fulfill the job requirements upon review by the contractor and is therefore, not hired. For example, some applicants may have completed applicable training programs, but may not necessarily have enough work experience to qualify for a Project construction job. Carpenters with years of house-building experience, for example, may not be qualified for the type of carpentry formwork required on the Project. The Wuskwatim Generation Project experience suggests that while differences in qualifications occurred, this was not a major factor affecting participation in construction jobs.

Each of the above was included in the model by applying a percentage adjustment to the employment estimates derived through the supply-demand matching. The percentages adopted were derived from experience with the Wuskwatim Generation Project and professional judgement. To account for uncertainty, high and low percentages were applied to each challenge. These provided the basis for producing a corresponding range of high to low employment estimates, Table 3-1 provides the values for each of the challenges considered in the model to produce the employment estimates.

Table 3-1: Value of Factors Affecting KCNs, CBN and Northern Aboriginal Construction Employment Estimates

Factors[1]		High Employment Estimates	Low Employment Estimates
Attraction	Keeyask Cree Nations	60%	30%
	Aboriginal Workers in Churchill-Burntwood-Nelson Region and the Regional Study Area	40%	20%
Availability	Applies to KNCs, CBN and Regional Study Area	25%	5%
Qualifications	Applies to KNCs, CBN and Regional Study Area	90%	80%

Note:
1. Determination of values were informed by data from the Wuskwatim Generation Project, perspectives of Manitoba Hydro staff about employment experience on the Wuskwatim Generation Project and professional judgement of senior Study Team members.

Employment estimates calculated by the model are provided in two forms as follows:

- Quarterly peak employment is the number of workers estimated to be required during each quarter of construction. Peak employment analysis is most useful for understanding the number of people affected by Project employment opportunities.
- Person-years of employment defined as the amount of work that one worker could complete during twelve months of full-time employment. This would equate to between to 2,090 and 2,295 hours per year (rounded based on regular weekly hours of 40 to 44 hours). Person-year analysis is most useful for understanding the economic benefits arising from Project employment opportunities. One person-year is defined in Section 12.6.3 of the JKDA as any 12 individual months of employment, regardless of whether the employment occurred in consecutive months, by the same person or in the same job.

3.2.1.1.5 Employment Model Limitations

A number of limitations should be noted with respect to this employment model:

- Detailed labour supply data were not specifically available for the CBN or for each of the KCNs communities. Therefore, these data were derived using a pro-rating method (on the basis of their share of the northern Aboriginal population).

- The analysis was carried out using workforce demand data that were current at the time of writing and based on engineering estimates with respect to construction methods, sequence and schedule. Actual workforce requirements will be defined by the contractors selected to undertake the work, within parameters set out in tender specifications.
- Percentage adjustments used in the model to capture challenges affecting employment levels are highly uncertain and are largely based on the Wuskwatim Generation Proejct experience and professional judgement applied to qualitative experiences reported in community-based research programs. To account for this uncertainty, a wide range of rates was used, resulting in a wide range of employment estimates.

3.2.1.2 Operation Phase Employment

The analysis of operation phase employment opportunities examined effects that flow from Project operation and maintenance employment. The operation and maintenance employment generated by the Project will primarily affect Gillam since these jobs will be based at Manitoba Hydro's offices in the community. These effects are derived from the number, type and location of the Project's operation and maintenance employment and Manitoba Hydro's experience with the uptake of these types of jobs.

Consideration is also given to the potential effect of operation employment opportunities that would be available to KCNs Members through provisions in the JKDA. Operation employment effects on the KCNs would flow largely from provisions in Section 12.7.1 of the JKDA, which set out 20-year targets for KCNs employment in Manitoba Hydro's operations throughout the province.

3.2.2 Business Opportunities

This analysis was undertaken primarily to characterize the involvement of the KCNs communities in DNCs for the Project. These contracts would provide KCNs businesses with substantial amounts of contract work during Project construction and would be their predominant source of business opportunities for the Project. Business effects on Gillam and Thompson were also examined. Business effects on the Regional Study Area are expected to be minimal in comparison to those on the KCNs communities, Thompson and Gillam in the Local Study Area. As such, limited analysis related to the Regional Study Area was undertaken.

The KCNs business opportunities analysis focused on the contracts identified in the JKDA as being available for possible direct negotiation with these partner First Nations. The main part of the analysis describes the nature and total value of these contracts based on allocations set out in the JKDA. In addition to these financial benefits, potential non-monetary benefits that are likely to flow to communities from the DNCs were identified.

Analysis of Project effects on Thompson businesses from construction-related expenditures is also presented. These Project-related effects should be largely beneficial if the community's economy stabilizes or declines as a result of the announced closure of the nickel smelter in Thompson. A scenario approach based on possible future states of the Thompson economy was used to examine the nature and magnitude of potential effects.

The Gillam business community could be affected by in-migration of Project operation and maintenance workers and their families. The effects of this population growth on Gillam's business community were examined based on information obtained from the key person interview (KPI) program undertaken as part of the socio-economic community-based research programs associated with the Project.

3.2.3 Income

The intent of this analysis was to estimate the amount of income that would be earned within the Local Study Area as a result of the Project. There are three main forms of income that would result from the Project in the Local Study Area: employment income, business income and equity investment income. Indirect income is also discussed, but no quantitative estimates were prepared because of the difficulty of tracking indirect income from construction projects of this kind.

Income analysis was based on data generated from a variety of sources. Calculation of construction employment income was based on the Manitoba Hydro workforce estimates and BNA wage rates currently expected to be in effect for the Project. During the operation phase, wages were estimated based on existing Manitoba Hydro pay scales. Potential business income was based on expected values for DNC construction packages, joint-venture participation rates and industry-standard profit margins as compiled by Industry Canada. Specific business income estimates were not provided in order to protect the ongoing DNC negotiation process. Estimates of equity investment income to the KCNs are not presented since this is commercially sensitive information, and will depend on the nature and level of investment chosen by each of the KCNs communities.

3.2.3.1 Construction Employment Income

Estimates of employment income were based on the person-year results from the employment analysis multiplied by expected wages for each category. Expected wages for each job category and other employment details are set out in BNA Appendices 1-17.

Manitoba Hydro identified job categories that fall into three main groupings: construction support, non-designated trades and designated trades (Manitoba Hydro and contractor supervisory jobs are excluded from this analysis). Within each of these job categories, there were often additional sub-categories, plus wage variances for foremen and apprentices and different calculations for overtime increases.

To account for these variations, high and low estimates were developed to provide an indication of the range of potential wages expected to result from Keeyask employment. The high-wage range is based on the highest individual wage that could potentially be applied to all workers in each of the job categories. Premiums paid to foremen were not applied because these premiums are only paid to a percentage of the workforce. The low-wage range is based on the lowest individual wage in each of the job categories. Apprentice wage levels were not used since they would only apply to a percentage of the workforce.

The total hours in a person-year varied by job category, because of the different overtime calculation methods applied to each job category. All job categories were assumed to work a 10-hour day and six-day week, as described in BNA Section 15.1. With overtime, a 60-hour week translated into either 68 or 75 regular-wage hours for most job categories. Workers also would receive a 10.5% premium on all actual

hours worked as vacation pay and to compensate for working through statutory holidays. This added 6.3 regular-wage hours to a 60-hour workweek.

Gross income for the high-wage range was calculated by multiplying the highest wage in each category by the total hours in a person-year for that category and the total person-years required by the Project as estimated by the employment model. To calculate gross income for the low-wage range the same calculation was applied, but based on the lowest wage in each category.

No wage ranges were provided for Manitoba Hydro and contractor supervisory workers. Wage estimates for Manitoba Hydro workers were based on 40 hours per week, 50 weeks per year; for the contractor supervisory workers, estimates were based on 60 hours per week, 52 weeks per year and a wage adjustment to reflect differences with other occupations involved in the Project.

The criteria for selecting the high- and low-wage ranges were intended to identify the widest possible range of reasonable outcomes. The results still provided a relatively narrow income range for total estimated Project employment income, with the low-wage range result only 12% less than the high-wage range result.

When analyzing income for northern Aboriginal communities, however, this range was much wider. The 12% income range from employment demand was compounded by the high and low employment estimates developed for each northern Aboriginal population. For example, the high employment results were more than two times the low employment results for KCNs employment. Therefore, the KCNs income estimates for the high wage range were three times those provided in the low range. This effect was most pronounced for the KCNs, which, as the smallest study group, was generally subject to the highest levels of variation. The combined variation in employment estimates and the wide range in income illustrate the compounding effect that these two factors have and the large range of potential income results from the Project.

3.2.3.2 Operation Employment Income

The methodology for estimating operation employment income was similar to that used for construction employment income. In this case, effects were primarily calculated for the KCNs and Gillam. Gillam would experience increased operational workforce requirements related to the new facility. Gillam operation employment income was based on projected operation workforce estimates multiplied by current salaries for those positions, and expected overtime premiums.

KCNs operation income effects were also estimated for employment resulting from the twenty-year hiring commitments as described in Section 12.7.1 of the JKDA. Operation employment income was estimated on the basis of an average salary, including overtime income, of approximately $108,000 per year. Benefits, such as a northern allowance, housing subsidy and southern vacation allowance, were not included.

3.2.4 Cost of Living

The cost of living for communities in the Local Study Area was examined using data collected through the socio-economic community-based research programs, as well as existing literature. The community-

based research programs included KPIs, along with a survey using the Revised Northern Food Basket (RNFB) methodology, developed by Indian and Northern Affairs of Canada (INAC, now called Aboriginal Affairs and Northern Development Canada [AANDC]), under the auspices of their Northern Food Mail Program (RNFB 2008a; RNFB 2008b). In addition, the Government of Canada's Isolated Posts and Government Housing Directive were used to confirm and better understand differentials of cost among the northern communities in the Local Study Area (National Joint Council 2010).

A literature review was undertaken to determine best practices and evaluate national studies with components for assessing the cost of living. These studies approach the cost of living by examining prices of goods and services in several categories, including housing, food and household items (*e.g.*, groceries), transportation, entertainment, clothing and education. Other studies reviewed for the cost of living analysis include the Consumer Price Index, the Isolated Posts and Government Housing and Statistics Canada's Market Basket Measure and Survey of Household Spending. While elements of each of these measures were incorporated into the analysis, each has inherent limitations. For example, while the Consumer Price Index is commonly used in Canada to measure variations in food and household items, it was designed to track cost differentials among large homogenous populations, particularly in urban centres across the country. As a result, it was not well suited to assessing costs for smaller populations living in the unique conditions experienced in northern Canada.

Considering potential pathways of effects in consultation with the KCNs communities, three main categories of costs were identified and included in this cost of living analysis: the cost of food and household items, the cost of housing, and the cost of transportation.

The cost of food and household items analysis relied primarily on survey data collected across the Local Study Area and in Winnipeg using an approach based on INAC's RNFB survey instrument. The RNFB was developed in 2007 by INAC's Northern Food Mail Program to monitor the weekly cost of purchasing a typical basket of food items in northern communities. Price data were collected using the RNFB survey instrument, which includes 67 foods generally available in remote northern grocery stores, as well as their service centres (*e.g.*, Thompson or Winnipeg). Selected food items reflected a balanced diet according to Canada's Food Guide, including the Aboriginal Food Guide released in April 2007, and took into account current food consumption patterns in northern communities. However, some foods, such as traditional or country foods and restaurant meals, were not part of the RNFB calculations.

The aim of the RNFB was to illustrate average food prices, rather than the lowest prices available in a community. Price data collected through the RNFB methodology should represent what consumers would typically pay to purchase the basket of goods, while minimizing the effects of product availability and price differences within communities. The RNFB also provided a uniform procedure for analysing comparative data among communities and a standard unit of measurement to determine weekly food costs for individuals or families, allowing for factors such as household composition, age, gender and pregnancy. The RNFB price survey was conducted in two KCNs communities – Split Lake (TCN) and York Landing (*Kawechiwasik*)(YFFN) – as well as the communities of Gillam, Thompson and Winnipeg between June and November 2009. WLFN (Ilford) and FLCN Fox Lake (Bird) did not have grocery stores at the time of the community-based research program. The Mooseocoot Convenience Store and Gas Bar opened in Ilford on April 27, 2010.

Support from, and personal communications with, the Food Mail Program Coordinator allowed the approach and methodology for the RNFB survey to be followed as closely as possible. However, the RNFB survey guidelines are very rigorous and the survey requires tight timelines for the collection of data, with the same individuals having the responsibility for collecting price data in all communities. Due to constraints in collecting data from communities in the Local Study Area, a slightly modified approach was adopted. The data should be interpreted with caution for two reasons. First, price data were collected by different individuals within each community, which may have led to minor variations in the recording of data. During analysis, the variations were minimized to the extent possible in order to make the data comparable to that of other communities. Second, the timeline for collecting food prices was over a longer period than is usually expected for the RNFB survey. For example, while initial data collection was undertaken in late June 2009 in the communities of Gillam and York Landing (*Kawechiwasik*), Thompson data were collected in mid-September and data for Split Lake and Winnipeg were recorded in November. As a result, some of the price variance may be attributable to seasonal factors, such as availability and access to the communities. In particular, the data collected in Winnipeg and Split Lake in November may reflect a different set of market conditions than the data collected in Gillam, York Landing (*Kawechiwasik*) or Thompson during the summer months. In spite of these variations, every attempt was made to conform as closely as possible to the RNFB methodology.

Taking into account the purpose of the RNFB survey, it should be noted that the RNFB pricing information presented in this analysis was not intended to be definitive. In addition, due to variations in collection methods, the data should not be compared to other RNFB studies undertaken by INAC. Instead, these data serve as a series of snapshots of consumer costs and a useful example of the range of prices encountered in the different-sized communities of the Local Study Area.

There were no formal tools similar to the RNFB available for surveying the costs of transportation and housing. Instead, a direct sampling approach was used to gather as much available pricing information as possible. This information was gathered within a regional context, including details from KPIs, to offer a more qualitative analysis than was used for the food and household items analysis.

Cost of living indexes calculated by the Treasury Board of Canada Secretariat and the National Joint Council as part of the Isolated Posts Allowance, provided comparison data and validation of the cost of living differentials estimated for the Local Study Area. These indexes are used to determine living allowances for Federal employees living in remote communities. The Federal Price Index Differential, part of the Isolated Post Allowance, was presented as a comparative index for a more diverse basket of goods and services in the communities. Details of the methodology used to determine the Price Index Differential allowance for each community were not publically available. However, survey components were known to include approximately 250 price indicators for items such as food, household supplies and operation, insurance premiums, transportation expenses, personal care supplies and services, pharmaceuticals, entertainment and other costs. The Price Index Differential was presented as a percentage representing the cost of these items in each community over their associated costs in Winnipeg.

A more detailed summary of the Cost of Living Analysis is provided in Appendix 3B – Cost of Living in Keeyask Communities Technical Memo.

3.2.5 Resource Economy

Effects on employment and income in the domestic and commercial resource sectors in the Local Study Area are examined in this section. Two main sources of effect were included, as noted below.

Direct changes to resource use activity were assessed. The Resource Use Section of the Socio-Economic, Resource Use and Heritage Resources Supporting Volume examined how the Project would affect various types of resource use that are occurring in the Local Study Area. Relevant findings were extracted and summarized in terms of their effects on employment and income in the resource sector of the local economy.

An examination was also undertaken of the potential for resource harvesters in the Local Study Area to participate in Project construction or operation phase employment. The high wage levels from Project employment opportunities could be expected to attract some resource harvesters to Project jobs. The implications of this for resource harvesting were examined based, in part, on experience with other projects. This was examined in relation to Project workforce requirements to determine when this effect could be most pronounced.

3.3 ENVIRONMENTAL SETTING

3.3.1 Employment and Training Opportunities – Local Study Area

This section describes existing training and employment opportunities in the Local Study Area. First, it describes the training outcomes of the HNTEI. Second, the section presents selected labour, education and economic indicators for the KCNs communities, Gillam and Thompson.

Employment rates across the Local Study Area are highly variable. KCNs communities have young and growing labour forces that currently experience high unemployment rates. In 2001[1], the unemployment rate in KCNs communities as a whole was 40.0%. In the Town of Gillam and City of Thompson, unemployment rates were 6.4% and 7.1%, respectively, in the same year. These lower unemployment rates for Gillam and Thompson reflect the high level of industrial development in both communities. The Town of Gillam includes two populations – a portion of the membership of FLCN who have traditionally inhabited the area and a largely non-Aboriginal population that has migrated to Gillam to take up Manitoba Hydro jobs associated with the operation of the northern hydroelectric system. The City of Thompson has greater economic diversity than other communities in the Local Study Area. As of fall 2010, Vale (formerly Vale Inco) mining and smelting operations continue to be the main economic driver for the local economy; however this may change with Vale's plans to close the smelter and refinery by 2015 (Government of Manitoba 2010g). However, the city's role as a regional centre for government services, retail and commercial services and transportation has helped to expand economic diversity.

[1] 2001 was chosen as a standard reference point for employment analysis because it provides the highest quality and most complete Statistics Canada data for all the communities.

3.3.1.1 Pre-Project Training – Hydro Northern Training and Employment Initiative

A pre-project training initiative, called the Hydro Northern Training and Employment Initiative (HNTEI was implemented to prepare Aboriginal northerners to participate in the construction employment and business opportunities available from northern hydroelectric development, including the Wuskwatim and Keeyask Projects. This initiative sought to add skills to the labour forces of the KCNs and of the Aboriginal labour force of the Regional Study Area as a whole. In addition, this initiative was intended to increase the size of the northern Aboriginal labour force that could be employed during the construction phase of the Project.

The HNTEI framework was modelled after aspects of a training initiative started by TCN's Community Education Training Program (CETP), which emphasized community-based training and First Nation responsibility for the design and delivery of the program, key features of the CETP approach. Under the initiative, the following First Nations and Aboriginal organizations designed and delivered most of the training, largely through community-based programs.

- Cree Nation Partners (CNP);
- Fox Lake Cree Nation (FLCN);
- York Factory First Nation (YFFN);
- Nisichawayasihk Cree Nation (NCN);
- Manitoba Keewatinowi Okimakanak (MKO); and
- Manitoba Metis Federation (MMF).

The non-profit corporation, Wuskwatim and Keeyask Training Consortium (WKTC), acted as the administrative and coordinating body for the HNTEI. The HNTEI sought to provide educational upgrading and enhance general job readiness, skills development and work experience. This was undertaken primarily so that Aboriginal people could take advantage of employment opportunities generated by construction of the Wuskwatim and Keeyask Projects in the Regional Study Area and also so that Aboriginal people could gain skills and experience that could be applied directly in home communities. The training partners offered a range of training based in communities and in academic institutions that included assessment services, academic preparation, academic and technical instruction and on-the-job training. Support programs to promote participation in training and to help retain trainees were also provided. Over half of the courses offered through the HNTEI were at the community level. This meant that residents did not have to leave their community and move to unfamiliar settings to take advantage of much of the training offered. Training was provided for a wide variety of construction occupations as well as several occupations based in the participating communities. The $60.3 million training initiative was funded by Manitoba Hydro, Canada and the Province of Manitoba. Manitoba Hydro and the Province of Manitoba began providing funding directly to the communities in 2002. Canada began funding the initiative in 2005 when WKTC was established to administer the initiative. The HNTEI was originally scheduled to end March 31, 2009, but Manitoba Hydro and the Province of

Manitoba agreed to extend it by one year to allow the Aboriginal partners additional time to utilize funding.

Over the life of the initiative, approximately 2,600 Aboriginal training opportunities were provided in communities throughout the Regional Study Area. Of that total, over 1,070 Aboriginal people were registered in occupational training courses or programs. Nearly all of the participants were from communities in the CBN area, which includes communities affected by past hydroelectric development and a sizable proportion from the KCNs.

The HNTEI also placed hundreds of trainees into jobs and facilitated several hundred work placements for their trainees. Partnerships with employers and various government departments resulted in job placements to complement training, allowing participants to accumulate valuable on-the-job work experience.

While the focus on education and training was to encourage and enable individual trainees to build specific skill sets, many individual trainees still need work experience to reinforce the classroom and demonstration training they completed in order to qualify for Keeyask construction jobs.

Information and insights gained from the HNTEI were instrumental in developing and refining the model to estimate employment effects of the construction phase of the Project. Specifically, the portion of the model that estimated the supply of labour to fill Project employment incorporated data regarding HNTEI participants who completed skill development courses and programs. These participants were included in the current labour supply and then forecasts were developed to estimate how the labour force would change between 2014 and 2021 when they would be required for the construction workforce.

Table 3-2 shows that an estimated 595 Aboriginal workers with relevant skills according to broad job categories required for Project construction from the Regional Study Area completed a training course or program that was funded through the HNTEI. The largest number undertook training in the non-designated trades, followed by designated trades. The majority in designated trades are at the apprentice level, although some trainees were accredited as journeymen as a result of the HNTEI program. A further 82 trainees with completed courses or program in the Regional Study Area are in the construction support category, with an additional 67 in skills related to business and management.

In the Local Study Area, 242 Members of the KCNs completed a training course or program that was funded through the HNTEI, with 116 in the non-designated trades, 31 in designated trades, 47 in construction support and 48 in business and management.

Table 3-2: Hydro Northern Training and Employment Initiative Participants with Completed Courses or Programs by Job Category and First Nation or Aboriginal Organization (2009, 2010)

HNTEI Completions (as at Q4 2009/2010)	CNP	FLCN	YFFN	KCN (Total)	MKO	MMF	NCN	Northern Region
Designated Trades	25	5	1	**31**	23	9	38	101
Construction Support	16	15	16	**47**		12	23	82
Non-Designated Trades	50	38	28	**116**	90	70	69	345
Business and Management	24	10	14	**48**	3		17	67
Construction Workforce Available from HNTEI Training	**115**	**68**	**59**	**242**	**115**	**91**	**147**	**595**

Source: Derived from Wuskwatim Keeyask Training Consortium 2009/10 fourth quarter report and other WKTC derived data.
Note:

- Table includes a portion (5%) of apprentices that have achieved less than Level 1 apprenticeship.
- Table includes trainees that have completed courses or programs through the HNTEI in occupational classifications that align with Keeyask workforce estimates as of August 2010.
- Numbers are subject to rounding.

3.3.1.2 Keeyask Cree Nations

This section provides a description of key labour, education and economy indicators based on Statistics Canada Census of Canada data. Data are presented for KCNs Members living in the communities located in the Local Study Area and do not include KCNs Members living off-reserve.

Included in the data are the following:

- TCN Members living in Split Lake;
- WLFN Members living in Ilford;
- YFFN Members living in York Landing (*Kawechiwasik*); and
- FLCN Members living in Fox Lake (Bird), but not Gillam (the FLCN urban reserve in Gillam was created in 2009, after the dataset presented in this section).

The data from each of those four communities were summed to arrive at the total for the KCNs. Where averages are reported, they are weighted to account for the relative size of the communities.

With respect to the data presented in this section, Statistics Canada attempts to enumerate 100% of the population in rural areas and on Indian Reserves, although reaching the entire population is not always possible. In some instances, data have been suppressed due to a low response rate, or to protect confidentiality in communities with small populations. All data have been rounded. The data from the KCNs communities are discussed in comparison to the Regional Study Area (represented as census divisions 19, 21, 22 and 23) and residents of the Province of Manitoba as a whole. Where necessary, data have been summed and weighted. Regional Study Area and Manitoba labour force characteristics are based on Statistics Canada 20% sample surveys.

Community-based research programs were undertaken in the KCNs communities to obtain first-hand data, where available, and perspectives from those knowledgeable about employment and training. Findings from the programs are incorporated in the presentation which follows in order to create as complete a picture as possible of employment and training in the KCNs communities. The majority of the community-based research programs took place in July, August and September of 2009, with some interviews conducted later in the fall and follow-up during February and March of 2010.

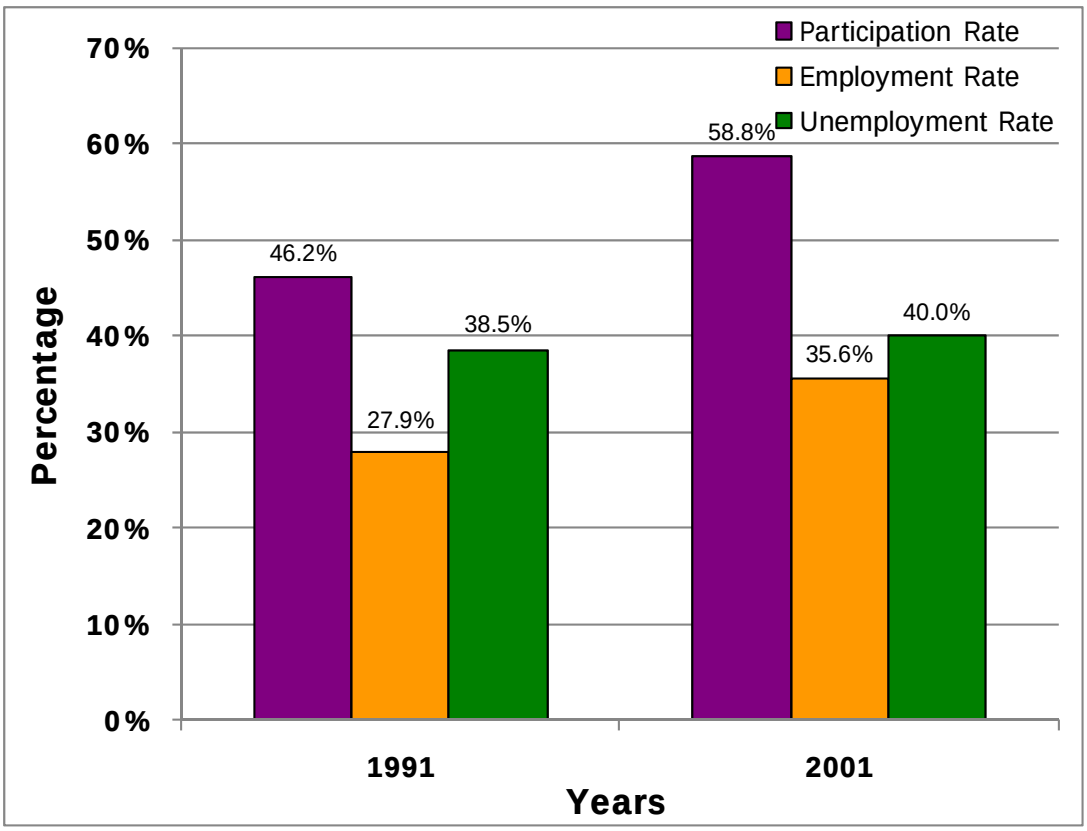
3.3.1.2.1 Labour Force

Figure 3-2 provides a synopsis of selected KCNs labour force indicators for 1991 and 2001 (for a more detailed analysis, see Appendix 3A, Table 3A-1). The potential labour force in the KCNs communities, which is the population 15 years and older, grew by almost 40% over the ten year period 1991 - 2001. This corresponds to a high rate of growth in the overall population of these communities (see Section 4.3.1).

The labour force participation rate also increased over the period 1991 - 2001, which represents the proportion of KCNs Members actively involved in the labour force: that is, employed, about to be employed or looking for work.

The 2006 labour force data for the communities of TCN and FLCN have been suppressed by Statistics Canada due to data quality issues (see Appendix 3A, Table 3A-1). Therefore, an accurate portrayal of KCNs labour force growth and other labour force measures could not be determined for 2006.

KCNs employment increased by almost 8 percentage points between 1991 and 2001, with the number of employed Members increasing from 290 to 515 (see Appendix 3A, Table 3A-1).



Source: Statistics Canada 1992, 2002.
Notes:

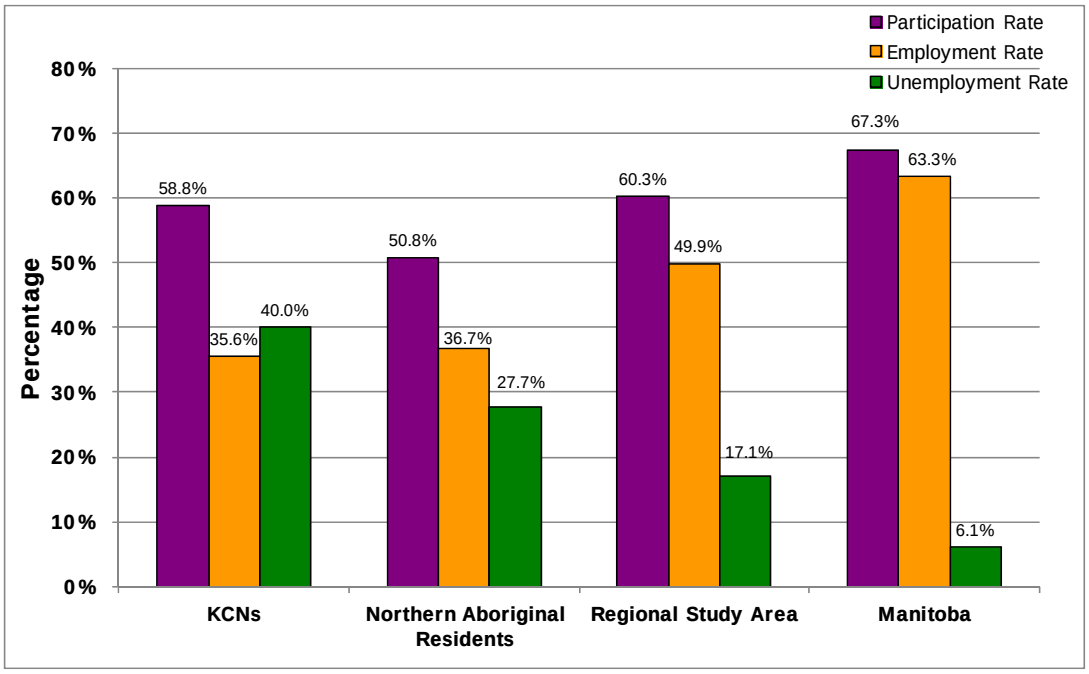
- Complete data set provided in Appendix 3A (Table 3A-1).
- KCNs includes Members of TCN, WFLN, YFFN and FLCN. Statistics Canada refers to these communities as Split Lake, Ilford, York Landing (*Kawechiwasik*) and Fox Lake 2, respectively.
- Participation rate refers to the labour force in the week (Sunday to Saturday) prior to Census Day (May 15, 2001), expressed as a percentage of the population 15 years of age and over. The participation rate for KCNs was calculated by InterGroup Consultants as the weighted average of the populations of TCN, WLFN, YFFN and FLCN 15 years and over. All data subject to rounding.
- Employment rate refers to the number of persons employed in the week (Sunday to Saturday) prior to Census Day (May 15, 2001), expressed as a percentage of the total population 15 years of age and over. The employment rate for KCNs was calculated by InterGroup Consultants as the weighted average of the populations of TCN, WLFN, YFFN and FLCN 15 years and over. All data subject to rounding.
- Unemployment rate refers to the unemployed persons, expressed as a percentage of the labour force in the week (Sunday to Saturday) prior to Census Day (May 15, 2001). The unemployment rate for KCNs was calculated by InterGroup Consultants as the weighted average of the populations of TCN, WLFN, YFFN and FLCN 15 years and over. All data subject to rounding.

Figure 3-2: Labour Force in Keeyask Cree Nations Communities (1991, 2001)

In 2001, the employment rate in KCNs was one percentage point below the employment rate of all northern Aboriginal residents; however, the employment rate was about 14 and 28 percentage points below the average employment rate for all residents of the Regional Study Area and Manitoba, respectively (Figure 3-3) (for a more detailed analysis, see Appendix 3A, Table 3A-2). The disparity in employment rates reflects a shortage of employment opportunities in KCNs communities, compounded

by existing barriers to accessing available employment (CNP 2010a, YFFN KPI Program 2009-2010; FLCN KPI Program 2009-2010).

In 2001, KCNs communities also had a high unemployment rate, about 34 percentage points above the provincial unemployment rate. Also, the unemployment rate in KCNs communities was about 12 percentage points greater than the corresponding rate for northern Aboriginal residents (Figure 3-3).



Source: Statistics Canada 2002, 2011a.
Notes:
Complete data set provided in Appendix 3A (Table 3A-2).

- KCNs includes Members of TCN, WFLN, YFFN and FLCN. Statistics Canada refers to these communities as Split Lake, Ilford, York Landing (*Kawechiwasik*) and Fox Lake 2, respectively.
- Northern Aboriginal residents defined as Aboriginal Identity Population in Statistics Canada Census Divisions 19, 21, 22 and 23.
- Regional Study Area defined as Statistics Canada Census Divisions 19, 21, 22 and 23.
- Participation rate refers to the labour force in the week (Sunday to Saturday) prior to Census Day (May 15, 2001), expressed as a percentage of the population 15 years of age and over. The participation rate for KCNs was calculated by InterGroup Consultants as the weighted average of the populations of TCN, WLFN, YFFN and FLCN 15 years and over. All data subject to rounding.
- Employment rate refers to the number of persons employed in the week (Sunday to Saturday) prior to Census Day (May 15, 2001), expressed as a percentage of the total population 15 years of age and over. The employment rate for KCNs was calculated by InterGroup Consultants as the weighted average of the populations of TCN, WLFN, YFFN and FLCN 15 years and over. All data subject to rounding.
- Unemployment rate refers to the unemployed persons, expressed as a percentage of the labour force in the week (Sunday to Saturday) prior to Census Day (May 15, 2001). The unemployment rate for KCNs was calculated by InterGroup Consultants as the weighted average of the populations of TCN, WLFN, YFFN and FLCN 15 years and over. All data subject to rounding.

Figure 3-3: Employment, Participation and Unemployment Rates in Keeyask Cree Nations Communities and Comparison Populations (2001)

The appearance of higher unemployment rates compared to other populations in the province does not present the full picture in the KCNs communities, since seasonal jobs and short-term contracts appear not to be fully reflected in Statistics Canada data. Findings from community-based research programs indicate that the majority of job opportunities tend to be seasonal and short-term (rather than full-time). These seasonal jobs tend to experience relatively high turnover (YFFN KPI Program 2009-2010; FLCN KPI Program 2009-2010). Depending on whether or not they were working in the week prior to Census Day (May 15, 2001), people with short-term and seasonal contracts (*e.g.*, debris clearing, heavy equipment operators on construction sites, catering contracts, Manitoba Hydro environmental studies, *etc.*), may have been described as "not in the workforce" or "unemployed" when, in fact, they were employed at some point during the year. The tendency towards seasonal and contract work in these communities may lead to a large proportion of workers collecting employment insurance in the off-season, rather than actively pursuing work. In particular, this could be the case in the winter, spring or late fall when fewer opportunities exist for additional contract work or part-time work.

The Census enumerates individuals at their usual place of residence; therefore, the number of KCNs Members who have relocated for work in other centres, such as Thompson, Brandon and Winnipeg would not be counted as residents of KCNs communities. In addition, the unemployment rate does not capture KCNs Members living in their own community that have never worked, have not pursued work for a period of time, or who operate in the informal economy. If these individuals were counted, the unemployment rate would be found to be higher than the rate published by Statistics Canada.

Findings from community-based research programs indicate that the most common reasons for people to leave their community are related to education and employment. The two factors would seem to go hand-in-hand since people are often required to pursue post-secondary training, particularly at the college and university level and in some cases a high school diploma, outside their home community. Once the person has successfully graduated, he (or she) may stay where he received his education if a job opportunity arises, as opposed to returning home where there may be fewer opportunities (CNP 2010a; YFFN KPI Program 2009-2010; FLCN KPI Program 2009-2010). Students who are educated locally might also leave their communities after graduation in search of opportunities elsewhere. Residents may also be forced to leave their community for health reasons – that is, to seek health care or to move closer to available health care (*e.g.*, people with diabetes). Migration of KCNs Members to and from their home communities can create enumeration problems, adding to the uncertainties in the Census data.

Community-based interviewees identified a number of barriers preventing people in KCNs communities from obtaining employment. In addition to a lack of full-time job opportunities, these barriers include family responsibilities, particularly caring for young children and an acknowledged lack of day care spaces and funding for community day care services. Other factors preventing people from obtaining employment include requirements for high school diplomas or higher levels of education, a mandatory driver's license, criminal record checks and the requirement that applicants have job-related experience. Personal reasons may also prevent people from obtaining employment, such as health problems, having to care for family members, addictions, a lack of confidence and the fear that they may lose their home if the employment requires work outside the community (YFFN KPI Program 2009-2010; FLCN KPI Program 2009-2010). Another factor noted is adapting to long work rotation schedules characteristic of construction site work, which interviewees felt would affect the strong family networks that people both

rely on and support. Community-based education and training facilities typically provide drivers' education and life skills courses to help Members of First Nation communities overcome some of these barriers (CNP 2010a; YFFN KPI Program 2009-2010; FLCN KPI Program 2009-2010).

3.3.1.2.2 Education

Education is an important factor influencing the extent to which Project employment opportunities may be filled by the labour force from the KCNs communities. Basic education levels for Members of the KCNs communities were determined using the 2001 Census of Canada, the year before HNTEI began in these communities. In 2001, the Census of Canada determined the highest level of education attained for individuals aged 20 years and over, which is presented in Table 3-3 (for a more detailed analysis, see Appendix 3A, Table 3A-3).

Table 3-3: Highest Level of Education in Keeyask Cree Nations Communities and Comparison Populations (2001)

Characteristics[1,2,3]	KCNs Members[4]	Northern Aboriginal Residents[5]	Regional Study Area[6]	Manitoba
Less than high school certificate	60.3%	59.6%	48.2%	34.4%
High school certificate or equivalent	6.7%	5.8%	8.5%	11.4%
Trades certificate or diploma	7.9%	n/a	13.0%	11.7%
Some post-secondary education	11.5%	10.4%	10.2%	11.4%
Post-secondary education certificate, diploma, degree, *etc.*[7,8]	13.1%	24.1%	20.2%	31.0%

Source: Statistics Canada 2002, 2011a.
Notes:
1. Complete data set provided in Appendix 3A (Table 3A-3).
2. Categories have been organized and rolled-up by InterGroup Consultants for ease of comparison.
3. Columns may not add to 100% due to rounding and/or unavailable data ("n/a").
4. KCNs includes Members of TCN, WFLN, YFFN and FLCN. Statistics Canada refers to these communities as Split Lake, Ilford, York Landing (*Kawechiwasik*) and Fox Lake 2, respectively.
5. Northern Aboriginal residents defined as Aboriginal Identity Population in Statistics Canada Census Divisions 19, 21, 22 and 23.
6. Regional Study Area defined as Statistics Canada Census Divisions 19, 21, 22 and 23.
7. For columns "KCNs Members", "Regional Study Area" and "Manitoba", "Post-secondary education certificate, diploma, degree, *etc.*" is the sum of "Post secondary non-university certificate or diploma", University certificate or diploma" and "University degree" in the corresponding table in Appendix 3A.
8. For column "Northern Aboriginal Residents", "Post-secondary education certificate, diploma, degree, *etc.*" is the sum of "Trades, college or university certificate or degree (below bachelor's level" and "University degree" in the corresponding table in Appendix 3A.

In 2001, approximately 25% of KCNs Members over 20 years of age had some post-secondary education or achieved a post-secondary education certificate, diploma, degree or other, which is 10 percentage points less than Northern Aboriginal residents, five percentage points less than Regional Study Area residents, and 17 percentage points less than Manitoba residents. Regional Study Area residents and Manitoba residents achieved trades certificates or diplomas at a rate that were about five percentage

points and four percentage points, respectively, above the KCNs Members' rate of about eight per cent (Table 3-3).

Findings from community-based research programs indicate that school enrolment has been on the rise due to increases in population within the community. FLCN, for example, saw increased enrolment from 60-70 students in the 2008/09 school year to 120 students in 2009-2010. The increase may be attributed to families moving back to the community. In one of the KCNs communities, there was a suggestion that the trend over the next ten years is toward an increase in enrolment, due to people moving back to the community and people choosing to have more children (FLCN KPI Program 2009-2010).

In 2001, the majority of Members from the KCNs communities, approximately 60%, had an education level of less than a high school certificate or equivalent (Table 3-3). The percentage of residents without high school diplomas was less than one percentage point higher than for northern Aboriginal residents, more than 12 percentage points higher than for residents of the Regional Study Area and nearly 26 percentage points higher than for residents of Manitoba[1].

Community-based research findings indicate that communities were particularly challenged with respect to technical trades, graduation past Grade 10 and university or college graduation. For TCN, in 2005, 23 people graduated with a high school diploma; eight people with Bachelors' degrees in arts, nursing, social work, education and general studies; and 11 people graduated with a college or university preparation certificate (TCN 2005). Graduation rates for TCN have been gradually rising, with 26 graduates reported in 2009 (CNP 2010a).

With respect to high school, a higher percentage of KCNs Members without diplomas may be due, in part, to the need for Members to access educational services elsewhere. This challenge is especially pronounced for WLFN and YFFN where students can go as high as grade eight and nine respectively, after which students must leave their communities for further education[2]. Once graduated, some may stay in those centres to find work, particularly if jobs in their home communities are unavailable or offer low wages. With respect to post-secondary education, successful completion of a diploma, certificate or degree in a larger urban centre requires overcoming a range of obstacles. For example, people choosing to leave their communities to pursue training opportunities often face culture shock. In the case of younger people especially, there may be more temptation to succumb to peer pressure leading to unhealthy behaviours or they may be bullied. Loneliness, resulting from students being away from family and friends for long periods of time, is also a real obstacle. General family instability and stress may occur in some cases where entire families move with their children or make frequent trips to stay in contact with them (CNP 2010a; YFFN KPI Program 2009-2010). Students may also be unprepared for higher expectations in large urban settings, as opposed to the schools in their home communities, ultimately leading to frustration and potentially withdrawal from their programs. Completion rates for students also tend to vary. Findings from community-based research programs suggest that graduation rates were on

[1] Highest level of education attained for northern Aboriginal residents is determined based on the population 25 years of age and over.

[2] TCN has a school up to Grade 12, as does Gillam, which FLCN Members attend. Fox Lake (Bird), YFFN and WLFN students must travel outside their home communities for high school.

the rise recently, with one community achieving a rate of 90% graduation from post-secondary programs (YFFN KPI Program 2009-2010; FLCN KPI Program 2009-2010).

Another noteworthy challenge to leaving the community for education and training relates to family responsibilities, including caring for young children or ailing or aged family members. Some members of KCNs communities who were willing to leave the community to access training opportunities were most likely to be single people with no family responsibilities (YFFN KPI Program 2009-2010). Lack of available childcare can prevent people from having the freedom to take courses, especially once this difficulty is added to others, like insufficient healthcare and education services. Strategies suggested for achieving success in training include bringing together all potential service providers to serve students in a coordinated fashion (for example, Awasis, National Native Alcohol and Drug Abuse Program and Community Health Representatives) (TCN 2008).

It is common for Members with post-secondary education to leave the community for jobs (YFFN KPI Program 2009-2010). Pursuing studies outside of community-based occupations may result in settling elsewhere to find employment.

3.3.1.2.3 Characteristics of the Workforce

Table 3-4 and Figure 3-3 provide an occupational breakdown for the KCNs (with comparison populations) for 2001, based on Statistics Canada (for a more detailed analysis, see Appendix 3A, Table 3A-4). Almost one-quarter of workers in KCNs communities are employed in the sales and service sector (retail, hotel and catering), which is more than any other sector. In the Regional Study Area and Manitoba, the percentage of sales and service workers is about three percentage points and one percentage point more than in KCNs communities, respectively. In Manitoba, the sales and service sector also comprised a larger percentage of the population than any other sector. Approximately one-third of Aboriginal residents living in the Regional Study Area work in the sales and service industry.

Other employment in the KCNs communities includes occupations in social science, health, education, government service and religion, which together make up the second largest employment sector. This sector employs a larger percentage of the population of KCNs communities than the percentage of the populations of northern Aboriginal, Regional Study Area or Manitoba residents (Table 3-4).

The trades, transport and equipment operators and related occupations sector is the third largest employer in the KCNs communities. The percentage of the populations employed by this sector is similar between the KCNs communities and the comparison populations: the comparison populations lie within about two percentage points of this sector's employment rate in the KCNs communities (Table 3-4).

Table 3-4: Labour Force by Occupation Classification in Keeyask Cree Nations Communities (2001)

Characteristics[1,2]	KCNs[3]	Comparison Populations		
		Northern Aboriginal Residents[4]	Regional Study Area[5]	Manitoba
Not applicable[6]	23.1%	n/a	5.8%	1.4%
All occupations[7]	76.3%	n/a	94.1%	98.6%
Management, business, finance and administration occupations[8]	13.0%	17.1%	18.1%	26.1%
Sales and service occupations	23.1%	33.2%	26.2%	23.9%
Social science, health, education, government service and religion[9]	19.6%	17.9%	16.1%	14.1%
Trades, transport and equipment operators and related occupations	16.6%	18.7%	17.2%	14.6%
Other	4.8%	13.3%	16.5%	19.9%

Source: Statistics Canada 2002, 2011a.
Notes:
1. Complete table provided in Appendix 3A [Table 3A-4].
2. Categories have been organized and rolled-up by InterGroup Consultants for ease of comparison.
3. KCNs includes Members of TCN, WFLN, YFFN and FLCN. Statistics Canada refers to these communities as Split Lake, Ilford, York Landing (*Kawechiwasik*) and Fox Lake 2, respectively.
4. Northern Aboriginal residents defined as Aboriginal Identity Population in Statistics Canada Census Divisions 19, 21, 22 and 23.
5. Northern Region defined as Statistics Canada Census Divisions 19, 21, 22 and 23.
6. Not available for Northern Aboriginal Resident population.
7. Not available for Northern Aboriginal Resident population.
8. Row "Management, business, finance and administration occupations" is sum of rows "Management occupations" and "Business, finance and administration occupations" in the corresponding table in Appendix 3A.
9. Row "Social science, health, education, government service and religion" is sum of rows "Health occupations" and "Social science, education, government service and religion" in the corresponding table in Appendix 3A.

The high number of KCNs Members working in trades, transport and equipment operation corresponds with findings from the community-based research program. In addition, since 2001, training and certification for these types of jobs tend to be where communities focused their HNTEI training efforts. These programs also facilitated training and placement of trainees into the workforce. Twenty-five people in YFFN were noted as having construction experience and 83 FLCN Members had experience in construction, which includes renovations, building of dams, dykes and residential construction. TCN estimate that about 89 Members have construction experience (CNP 2010a), while WLFN estimate that 41-50 Members have construction experience (CNP 2010d). There were 10 FLCN Members with experience as heavy equipment operators, 15 as large truck drivers, 16 as trades apprentices and nine as journeyman trades people (FLCN KPI Program 2009-2010). Among YFFN Members, 33 individuals have completed training or are experienced heavy equipment operators and 14 individuals are trained or experienced in truck driving. Among YFFN Members, approximately 35 individuals have varying degrees

of training or experience in carpentry and small numbers have experience in plumbing, training in diesel mechanics and as electricians (YFFN KPI Program 2009-2010). TCN Members have experience in operating heavy equipment, carpentry, catering, ironworking and other occupations (CNP 2010a). WLFN Members have experience in operating heavy equipment, cooking, as skilled general labourers, carpentry, environmental monitoring, heavy mechanics, security guards, and truck drivers (CNP 2010d).

Notably, the percentage of KCNs Members employed in social science, education, government service and religion was higher than any comparison population, including twice the rate for the province as a whole. The high percentage of KCNs Members working in this sector corresponds with information gathered from the communities, which indicated that a number of the jobs available in their communities are with the First Nation government (typically full-time), the community school and with local training initiatives and programs. For TCN, 86-90 Members were employed full-time in the education sector, with an additional 9-20 Members working in part-time, temporary, or seasonal positions (CNP 2010a). For WLFN, no employment numbers were provided for the education sector; however, WLFN operates an elementary school, which serves about 25 children annually. Members of WLFN have identified a high turnover rate for teaching-staff as a serious issue in the community (CNP 2010d). For FLCN, 10 people were employed at the school and seven at Fox Lake Employment and Training. For YFFN, 21 people were employed at the school; of those, 15 were First Nation Members. An additional 13 YFFN individuals were trained, were taking training or had experience in early childhood education and childcare (YFFN KPI Program 2009-2010).

Few KCNs Members were employed in the category of occupations unique to primary industry or natural and applied sciences, with numbers notably lower overall compared to the other populations[1]. Findings from community-based research suggest that students expecting to obtain work on hydroelectric developments (construction and/or operation jobs) were not taking the courses that are required for these jobs, such as science and math courses (CNP 2010a; YFFN KPI Program 2009-2010). In addition, there is evidence that effort is being made to strengthen math and science curricula at Split Lake: Brandon University sponsors a mini-university in the summer months with math, science, and university exposure courses; Chief Sam Cooke High School coordinates organized trips to the University of Manitoba for science and technology events; two computer labs were scheduled for the next school term; and a Cultural Science Pilot Program was being developed to include courses in electricity and featuring visits to Manitoba Hydro dams. Community representatives have indicated that under-funding of on-reserve schooling is a serious impediment to achieving solid high school and post-secondary credentials (CNP 2010a; CNP 2010d).

3.3.1.2.4 Skills Pertinent to Project Construction Employment

As noted in Figure 3-4, a consistent and comparable skills inventory for the four KCNs communities was not available. Therefore, 2001 Statistics Canada occupational data and information about graduates from the HNTEI were used to forecast the skills available within the KCNs communities by the start of

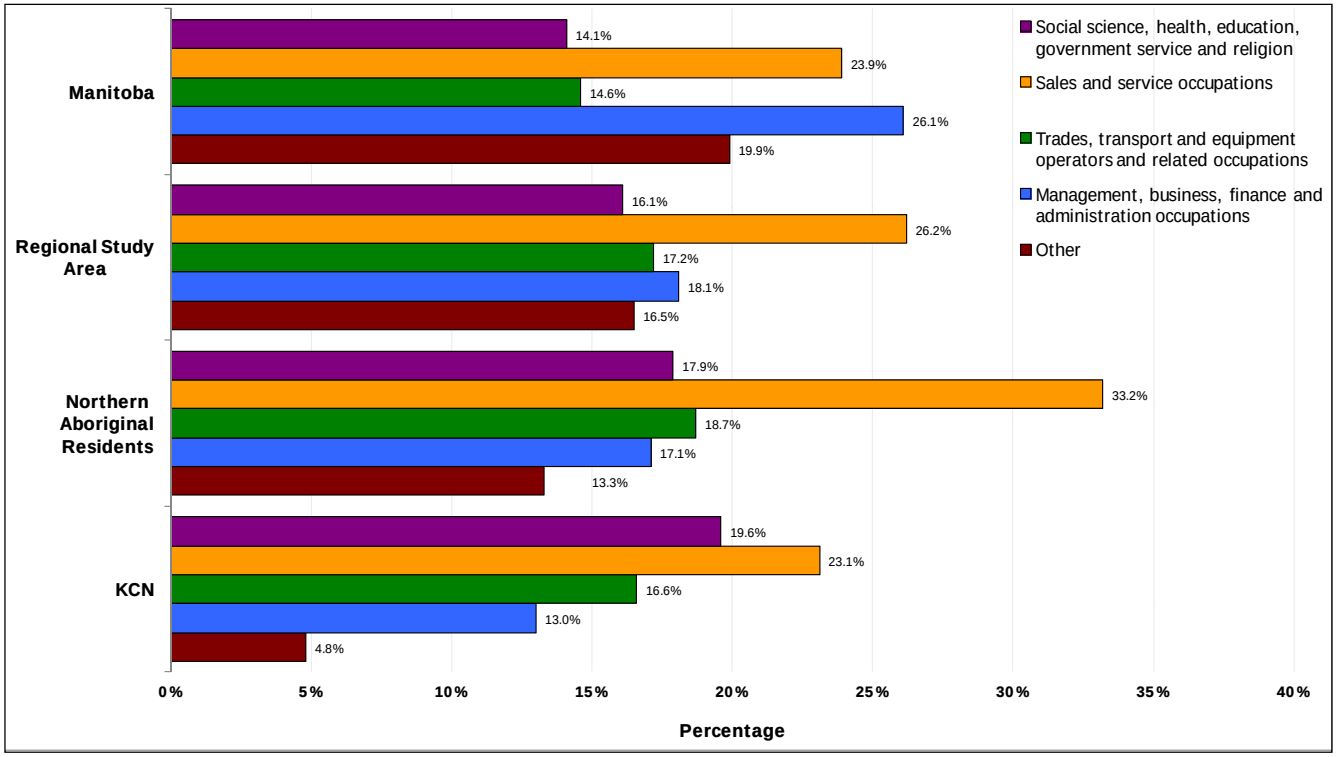
[1] Primary industry is defined by Statistics Canada (North American Industry Classification System) as jobs related to natural resources – "mining, forestry, fishing and agriculture, including secondary employment related with these industries."

Project construction[1]. These estimates include all KCNs Members living in the Regional Study Area, both on- and off-reserve[2]. Table 3-5 presents estimates of the number of KCNs Members with relevant skills according to broad job categories required for Project construction[3] (for a more detailed analysis, see Appendix 3A, Table 3A-5). The estimates are for 2014 when construction begins and 2021 when construction is approaching completion.

[1] While the total KCNs workforce is modelled, more certainty can be attributed to the HNTEI data, which represents actual data collected while the HNTEI was in operation.

[2] A factor of 80% was applied to off-reserve KCNs Members.

[3] This skills inventory identifies the estimated maximum number of KCNs Members available to work on the Project and includes people who are already employed, may not have the proper qualifications required by hydro projects and who may not be available to secure employment opportunities when they arise. These and other factors are taken into account during the scenario analysis portion of the employment modeling process.



Source: Statistics Canada 2002, 2011a.
Notes:

- Complete table provided in Appendix A (Table 3A-4).
- Categories have been organized and rolled-up by InterGroup Consultants for ease of comparison.
- KCNs includes Members of TCN, WFLN, YFFN and FLCN. Statistics Canada refers to these communities as Split Lake, Ilford, York Landing (*Kawechiwasik*) and Fox Lake 2, respectively.
- Northern Aboriginal residents defined as Aboriginal Identity Population in Statistics Canada Census Divisions 19, 21, 22 and 23.
- Regional Study Area defined as Statistics Canada Census Divisions 19, 21, 22 and 23.
- "Management, business, finance and administration occupations" is sum of "Management occupations" and "Business, finance and administration occupations" in the corresponding table in Appendix 3A.
- "Social science, health, education, government service and religion" is sum of "Health occupations" and "Social science, education, government service and religion" in the corresponding table in Appendix 3A.

Figure 3-4: Comparison of Labour Force by Occupation Classification (2001)

Table 3-5: Keeyask Cree Nations Employment Model Skills by Job Category (2014, 2021)

Skills By Job Category[1]	2014 (Construction Start)		2021 (Construction End)	
	KCNs Labour Supply Resulting From HNTEI[2]	KCNs Total Labour Supply[3]	KCNs Labour Supply Resulting From HNTEI[2]	KCNs Total Labour Supply[3]
Designated Trades (Construction, Transportation and industrial)	31	85	31	90
Non-Designated Trades (Construction, Transportation and Industrial)	116	165	116	170
Construction Support and Service Trades	95	230	95	255
TOTAL	**242**	**480**	**242**	**515**

Source: Source: Derived from Wuskwatim Keeyask Training Consortium 2009/10 fourth quarter report and other WKTC derived data. Analysis prepared by InterGroup Consultants Inc. 2010.

1. Complete data set provided in Appendix 3A (Table 3A-5).
2. Table includes a portion (5%) of apprentices that have achieved less than Level 1 apprenticeship. Table includes trainees that have undertaken training through the HNTEI in occupational classifications that align with Keeyask workforce estimates as of August 2010.
3. Derived from HNTEI labour supply projection and projection of Statistics Canada occupational data (2001). Analysis prepared by InterGroup Consultants Inc, 2010.
4. Numbers are subject to rounding.

The HNTEI program ended in 2010. In subsequent years, there may be some opportunities for training new labour force entrants, but they will be much smaller in number and likely concentrated in regional centres, such as Thompson and The Pas, rather than in the KCNs communities. The analysis shows that a large portion of the KCNs workforce expected to be available for the start of construction in 2014 will have received some training through the HNTEI Program (*i.e.,* approximately 50%). New entrants trained after the HNTEI program ended in March 2010 would increase the total labour pool to some degree during the construction period, although this is not expected to have a substantial effect on the total available KCNs labour supply.

Carpenters account for more than half of the KCNs' Members in the designated trades, with approximately 45% of these carpenters receiving some training through the HNTEI program. Heavy equipment operators are the most common non-designated trade, accounting for more than one-third of all non-designated trade jobs. More than three-quarters of heavy equipment operators received some HNTEI. Clerks and typists are the most common construction support and service trades, accounting for about 50% of these kinds of jobs. Approximately three-quarters of those clerks and typists received some training through HNTEI (Appendix 3A, Table 3A-5).

3.3.1.3 Gillam

This section provides a description of key labour, education and economy indicators, based on Statistics Canada Census of Canada data. All data for the Town of Gillam have been rounded. For comparison, Gillam data are discussed in reference to northern Aboriginal residents, residents of the Regional Study Area and residents of the Province of Manitoba as a whole. The Regional Study Area is represented as Census Divisions 19, 21, 22 and 23; and data have been summed and weighted where necessary. Northern Aboriginal residents are characterized as those residents of the Regional Study Area who self-identify as Aboriginal. Regional Study Area and Manitoba labour force characteristics are based on 20% samples.

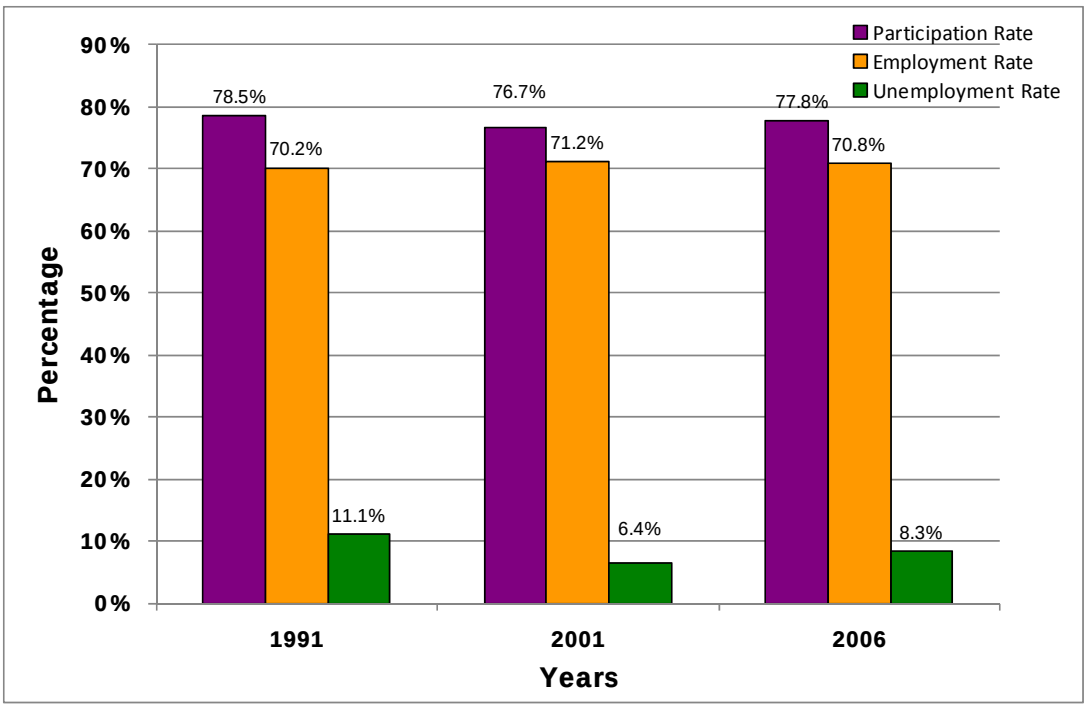
A community-based research program was undertaken in Gillam to obtain first-hand data, where available, and perspectives from those knowledgeable about employment and training. The majority of the KPI programs took place in July, August and September of 2009, with some interviews conducted later in the fall; follow-up interviews took place during February and March of 2010. For the most part, the interviews were undertaken with community members.

3.3.1.3.1 Labour Force

Figure 3-5 provides a summary of selected labour force indicators for Gillam for 1991, 2001 and 2006 (for a more detailed analysis, see Appendix 3A, Table 3A-6). The potential labour force in Gillam, defined as the population aged 15 years and older, experienced a notable decrease between 1991 and 2001, dropping over 38% (see Appendix 3A, Table 3A-6). This decrease likely occurred due to a reduction in the required labour force employed by Manitoba Hydro between those years. Since employment in Gillam is largely dependent on the needs of Manitoba Hydro, much of the decrease in the potential labour force should reflect the out-migration of former Manitoba Hydro employees and their families from the community. The population of Gillam also declined by 38% during this time. In the period 2001 to 2006, the potential labour force in the community increased by approximately 5% (see Appendix 3A, Table 3A-6).

Although the potential labour force and population of Gillam fell through the 1990s, the participation rate remained relatively stable over this time, declining by less than two percentage points over the decade. The rate increased by more than one percentage point from 2001 to 2006.

Employment rates in Gillam remained relatively stable among the years presented in Figure 3-5, although the number of individuals employed in the community declined by about 350 from 1991 to 2001 (see Appendix 3A, Table 3A-6). Partially due to an overall decline in the potential labour force from 1991 to 2001, the employment rate increased slightly during those years, since fewer individuals remained to compete for employment. The employment rate declined from 2001 to 2006 by less than one percentage point.



Source: Statistics Canada 1992, 2002, 2007a.
Notes:

- Complete data set provided in Appendix 3A (Table 3A-6).
- Participation rate refers to the labour force in the week (Sunday to Saturday) prior to Census Day (June 4, 1991; May 15, 2001; May 16, 2006), expressed as a percentage of the population 15 years of age and over.
- Employment rate refers to the number of persons employed in the week (Sunday to Saturday) prior to Census Day (June 4, 1991; May 15, 2001; May 16, 2006), expressed as a percentage of the total population 15 years of age and over.
- Unemployment rate refers to the number of unemployed persons, expressed as a percentage of the labour force in the week (Sunday to Saturday) prior to Census Day (June 4, 1991; May 15, 2001; May 16, 2006).

Figure 3-5: Change in Employment, Participation and Unemployment Rates in Gillam (1991, 2001, 2006)

The unemployment rate in Gillam fluctuated from 1991 to 2006, with a 4.7 percentage point decrease between 1991 and 2001 and a 1.9 percentage point increase between 2001 and 2006. The number of unemployed individuals in Gillam dropped by 75 between 1991 and 2001 and increased by 15 between 2001 and 2006 (see Appendix 3A, Table 3A-6).

Throughout the course of the community-based research programs, local employers identified the challenges associated with losing their skilled workers to other employers – in some cases to Manitoba Hydro. This challenge was exacerbated by the low unemployment rates and lack of suitable potential employees in the community. Other employers noted the difficulties associated with recruiting staff due to high wage expectations. Even maintaining their existing workforce was cited as difficult by some employers. Similarly, employers in skilled and professional sectors referred to challenges in hiring people from out-of-town aside from the spouses of Manitoba Hydro or the Royal Canadian Mounted Police (RCMP) employees. Several employers stated that those individuals who were willing to work were

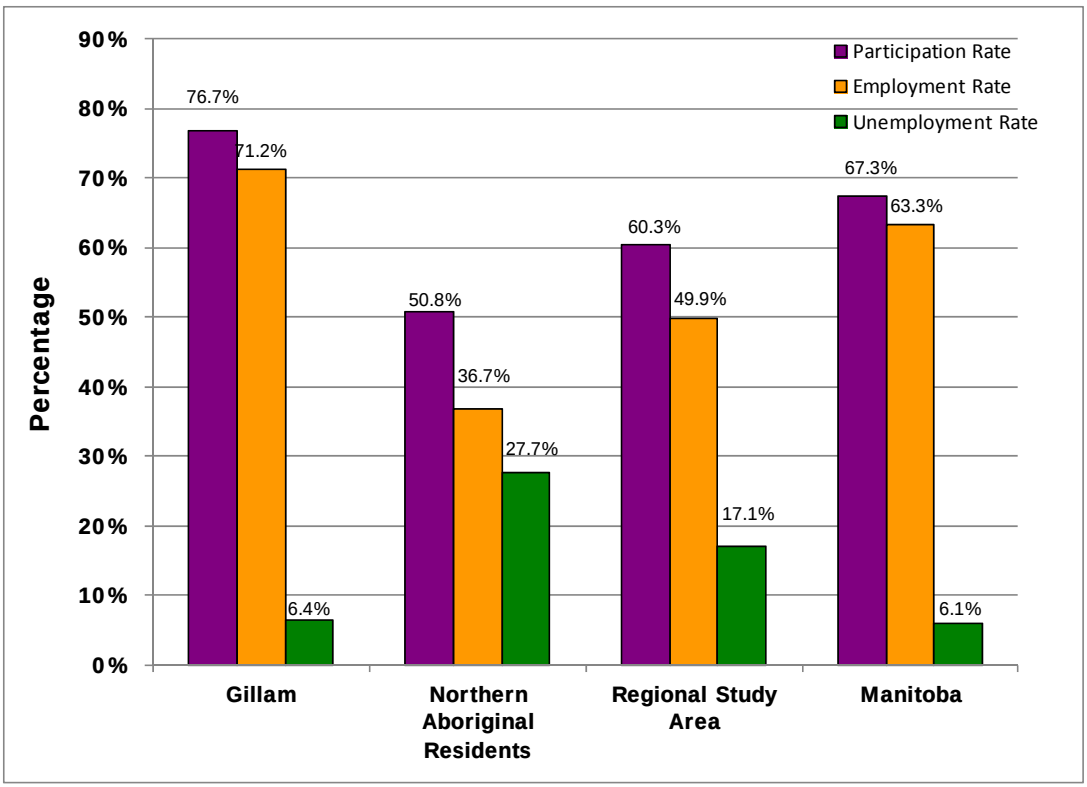
already working, leaving those that may not necessarily be as qualified or interested to fill the remaining jobs (Gillam KPI Program 2009-2010).

As shown in Figure 3-6, the participation rate in Gillam in 2001 was nearly 77%. The participation rate in Gillam exceeded that of the Regional Study Area by over 15 percentage points and that of Manitoba by nearly 10 percentage points (for a more detailed analysis, see Appendix 3A, Table 3A-7).

Findings from the community-based research programs suggest there are two main groups that comprise a part of the potential labour force not currently working in Gillam: (1) the spouses of Manitoba Hydro employees; and (2) FLCN Members residing in Gillam, but not currently employed. The reasons for which spouses of Manitoba Hydro employees are not working tend to be associated with a lack of daycare spaces in the community and a lack of desirable employment prospects. In some instances, these reasons have persuaded families to leave the community to pursue opportunities elsewhere (Gillam KPI Program 2009-2010). In the case of FLCN Members, participation in the labour force is sometimes limited because of a lack of local training opportunities to access local jobs. Many FLCN Members, particularly young families, do not want to leave the Gillam and Fox Lake (Bird) area for education and training due to challenges experienced when living in larger urban centres (*e.g.*, lack of family support, childcare and family responsibilities, culture shock of urban centres and the expense of living off-reserve) (FLCN KPI Program 2009-2010). Because FLCN Members are part of the Gillam community, their Members represent another portion of the available labour force in Gillam.

Like participation rates, employment rates in Gillam exceeded those of the Regional Study Area and the province as a whole in 2001. That year, the overall employment rate in Manitoba was about 63%, while the rate of the Regional Study Area was about 50%. In comparison, the employment rate in Gillam at that time was over 71%, reflecting the affect Manitoba Hydro had on the workforce in the community.

The unemployment rate in Gillam in 2001 also reflected the strong presence of Manitoba Hydro in the community: the unemployment rate in Gillam was 10.7 percentage points lower than that of the Regional Study Area. Also, this rate was 0.3 percentage points higher than the unemployment rate for Manitoba in 2001 (Figure 3-6).



Source: Statistics Canada 2002, 2011a.
Notes:

- Complete data set provided in Appendix 3A (Table 3A-7).
- Northern Aboriginal residents defined as Aboriginal Identity Population in Statistics Canada Census Divisions 19, 21, 22 and 23.
- Regional Study Area defined as Statistics Canada Census Divisions 19, 21, 22 and 23.
- Participation rate refers to the labour force in the week (Sunday to Saturday) prior to Census Day (May 15, 2001), expressed as a percentage of the population 15 years of age and over. The participation rate for Northern Aboriginal residents was calculated by InterGroup Consultants as the weighted average of the Aboriginal Identity Population 15 years and over for Census Divisions 19, 21, 22 and 23 and, for Regional Study Area, the weighted average of the total population 15 years and over for Census Divisions 19, 21, 22 and 23.
- Employment rate refers to the number of persons employed in the week (Sunday to Saturday) prior to Census Day (May 15, 2001), expressed as a percentage of the total population 15 years of age and over. The employment rate for Northern Aboriginal residents was calculated by InterGroup Consultants as the weighted average of the Aboriginal Identity Population 15 years and over for Census Divisions 19, 21, 22 and 23 and, for Regional Study Area, the weighted average of the total population 15 years and over for Census Divisions 19, 21, 22 and 23.
- Unemployment rate refers to the unemployed persons, expressed as a percentage of the labour force in the week (Sunday to Saturday) prior to Census Day (May 15, 2001). The unemployment rate for Northern Aboriginal residents was calculated by InterGroup Consultants as the weighted average of the Aboriginal Identity Population 15 years and over for Census Divisions 19, 21, 22 and 23 and, for Regional Study Area, the weighted average of the total population 15 years and over for Census Divisions 19, 21, 22 and 23.

Figure 3-6: Employment, Participation and Unemployment Rates in Gillam and Comparison Populations (2001)

3.3.1.3.2 Education

Education is an important factor influencing the extent to which Project employment opportunities may be filled by the labour force in Gillam. The highest level of education attained for individuals aged 20 years and over for Gillam residents was determined using the 2001 Census of Canada. Data are presented in Table 3-6 (for a more detailed analysis, see Appendix 3A, Table 3A-8). All percentages of populations are based on population aged 20 years and over for Gillam, the Regional Study Area and Manitoba; and 25 years and over for Northern Aboriginal Residents population.

In 2001, approximately 62.8% of the residents of Gillam over age 20 had a high school, trades or post-secondary education certificate or equivalent. Twenty-nine percent of residents in Gillam did not have a high school certificate, compared to 48% of residents of the Regional Study Area and 34% of Manitoba residents without a high school certificate.

As detailed in Appendix 3A, Table 3A-8, over 50% of the population of Gillam has had some post-secondary training or achieved a trade or post-secondary non-university certificate or diploma, with nearly 10% of the population holding a university degree and over 20% holding a university or non-university certificate or diploma. In contrast, less than eight per cent of Regional Study Area residents had university degrees in 2001. Similarly, approximately 12% of residents of Regional Study Area and about 17% of Manitobans held a university or non-university certificate or diploma at that time. However, the approximately 10% of Gillam residents with a university degree was less than the 14% for the Province of Manitoba as a whole.

Approximately 52% of the Gillam population had engaged in some form of post-secondary education. Of those who had post-secondary education, over 29% had attained a trades certificate or diploma and 19% had obtained a university degree.

Despite a highly skilled workforce, in certain sectors of the local economy, skill development and training were noted as issues for employers. Among retail and service providers, employers expressed difficulty in recruiting staff with the necessary skills and experience (Gillam KPI Program 2009-2010).

Manitoba Hydro has begun to bring more trainers to Gillam, rather than have members of the community go to Thompson or elsewhere, to decrease the amount of time that people have to be away from their family and community. This has increased both the number of training opportunities and the success for job applicants (Gillam KPI Program 2009-2010).

Table 3-6: Highest Level of Education in Gillam and Comparison Populations (2001)

Characteristics[1, 2, 3, 4]	Gillam	Comparison Populations		
		Northern Aboriginal Residents[5]	Regional Study Area[6]	Manitoba
Less than high school certificate	29.0%	59.6%	48.2%	34.4%
High school certificate or equivalent	11.0%	5.8%	8.5%	11.4%
Trades certificate or diploma	20.7%	n/a	13.0%	11.7%
Some post-secondary education	n/a	10.4%	10.2%	11.4%
Post-secondary education certificate, diploma, degree, *etc.*[7, 8]	31.1%	24.1%	20.2%	31.0%

Source: Statistics Canada 20022011a.
Notes:
1. Table is based on population aged 20 years and older for Gillam, Regional Study Area and Manitoba populations; and for 25 years and older for Northern Aboriginal Residents populations.
2. Complete data set provided in Appendix 3A (Table 3A-8).
3. Categories have been organized and rolled-up by InterGroup Consultants for ease of comparison.
4. Columns may not add to 100% due to rounding and/or unavailable data (n/a).
5. Northern Aboriginal residents defined as Aboriginal Identity Population in Statistics Canada Census Divisions 19, 21, 22 and 23.
6. Regional Study Area defined as Statistics Canada Census Divisions 19, 21, 22 and 23.
7. For columns "Gillam", "Regional Study Area" and "Manitoba", "Post-secondary education certificate, diploma, degree, *etc.*" is the sum of "Post-secondary non-university certificate or diploma", University certificate or diploma" and "University degree" in the corresponding table in Appendix 3A.
8. For column "Northern Aboriginal Residents", "Post-secondary education certificate, diploma, degree, *etc.*" is the sum of "Trades, college or university certificate or degree (below bachelor's level" and "University degree" in the corresponding table in Appendix 3A.

While more than one-fifth of the Gillam population 20 years of age and older attained a trades certificate or diploma, local employers cite challenges in recruiting certified tradesmen, particularly carpenters (Gillam KPI Program 2009-2010).

According to local school officials, there has been an increase in high school enrolment in Gillam recently, with about 30 new students. The increase was attributed to program changes and improvements, including the introduction of calculus and university-level mathematics courses. In addition, internship programs that allow students to receive credit for on-the-job training related to trades are also popular among new students. These programs were developed to help address the need to retain a local workforce of existing Manitoba Hydro employees' families and other residents of the community, including FLCN Members (Gillam KPI Program 2009-2010).

3.3.1.3.3 Characteristics of the Workforce

Gillam has strong ties to Manitoba Hydro and hydroelectric energy production and has some attributes typical of a single-industry economic base. Table 3-7 and Figure 3-7 present occupations in Gillam in 2001 compared to northern Aboriginal residents, the Regional Study Area and Manitoba as a whole based on the total labour force 15 years and over (for a more detailed analysis, see Appendix 3A, Table 3A-9).

The largest proportion of Gillam's total workforce is employed in the trades, transport and equipment operators and related occupations sector. In contrast, the provincial rate of employment in this occupational sector is less than half the rate found in Gillam. The proportion of Gillam's workforce employed by this sector is about 15 percentage points and 16 percentage points greater than for northern Aboriginal residents and Regional Study Area residents, respectively (Table 3-7). This disparity reflects the extent to which Manitoba Hydro and its contractors are major employers in the community.

The sales and services sector employs the second largest percentage of the workforce compared to the other occupational sectors in Gillam, although this proportion is 5-14 percentage points smaller than in the comparison populations (Table 3-7). To some extent, the smaller percentage of workers in the sales and services sector reflects the fact that many retail services are not available in the town itself. Interviews with members of the Gillam community note the lack diversity and number of services and retailers in the community (including restaurants and clothing stores) as reasons for people to do their shopping in Thompson (Gillam KPI Program 2009-2010).

While the sales and services sector employs a smaller percentage of the workforce in Gillam than in the comparison populations, findings from community-based research suggest that several employers felt that they were experiencing recruitment difficulties due to what they believed to be high salary expectations. Others asserted that community youth required additional motivation to pursue available opportunities (Gillam KPI Program 2009-2010). The lack of available housing for non-Manitoba Hydro employees (*e.g.*, those people that may work in the service industry) may also be contributing to recruitment challenges.

Table 3-7: Labour Force by Occupation Classification in Gillam and Comparison Populations (2001)

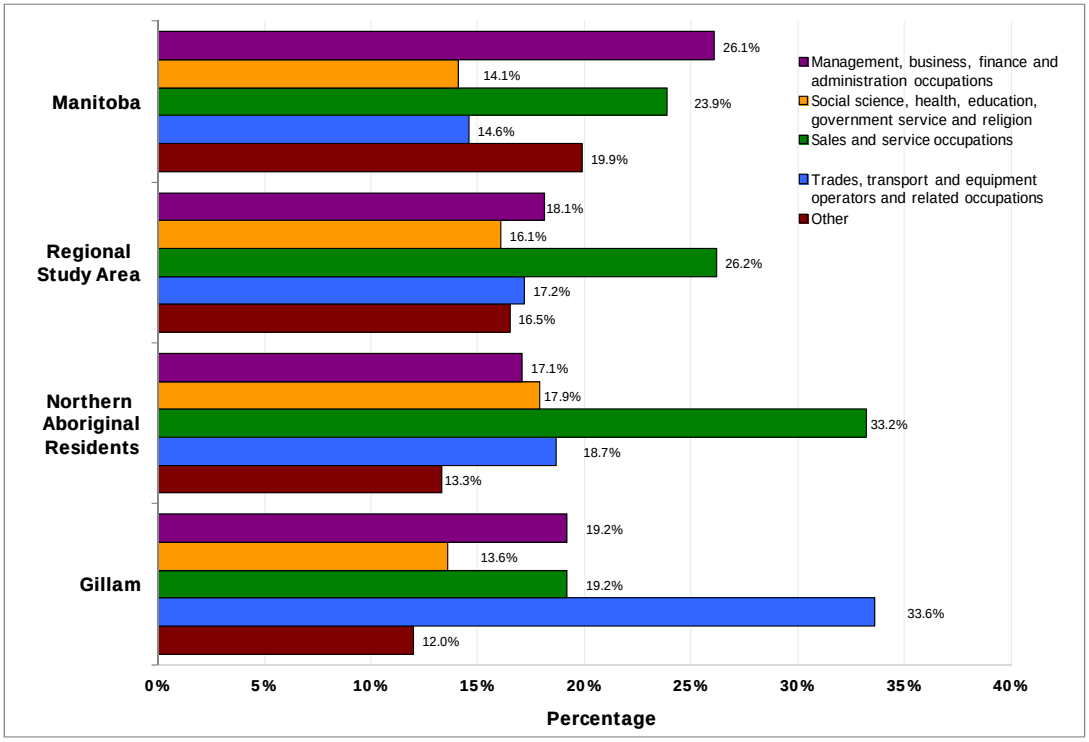
Characteristics[1, 2, 3, 4]	Gillam	Comparison Populations		
		Northern Aboriginal Residents[5]	Regional Study Area[6]	Manitoba
Not applicable[7]	1.6%	n/a	5.8%	1.4%
All occupations[8]	98.4%	n/a	94.1%	98.6%
Management, business, finance and administration occupations[9]	19.2%	17.1%	18.1%	26.1%
Sales and service occupations	19.2%	33.2%	26.2%	23.9%
Social science, health, education, government service and religion[10]	13.6%	17.9%	16.1%	14.1%
Trades, transport and equipment operators and related occupations	33.6%	18.7%	17.2%	14.6%
Other	12.0%	13.3%	16.5%	19.9%

Source: Statistics Canada 2002, 2011a.
Notes:
1. Data is based on total labour force 15 years and over.
2. Complete table provided in Appendix 3A (Table 3A-9).
3. Categories have been organized and rolled-up by InterGroup Consultants for ease of comparison.
4. Columns may not add to 100% due to rounding and/or unavailable data (n/a).
5. Northern Aboriginal residents defined as Aboriginal Identity Population in Statistics Canada Census Divisions 19, 21, 22 and 23.
6. Regional Study Area defined as Statistics Canada Census Divisions 19, 21, 22 and 23.
7. Not available for Northern Aboriginal Resident population.
8. Not available for Northern Aboriginal Resident population.
9. Row "Management, business, finance and administration occupations" is sum of rows "Management occupations" and "Business, finance and administration occupations" in the corresponding table in Appendix 3A.
10. Row "Social science, health, education, government service and religion" is sum of rows "Health occupations" and "Occupations in social science, education, government service and religion" in the corresponding table in Appendix 3A.

The unique nature of the Gillam workforce is especially apparent in the large percentage of the workforce in occupations related to the natural and applied sciences compared to the comparison populations (see Appendix 3A, Table 3A-9). In Gillam, the rate of employment in this sector was 8.8%, more than five times the rate of northern Aboriginal residents (1.6%), more than double the rate of Regional Study Area residents (3.7%), and nearly double the rate of Manitoba residents (4.6%). This occupational category represents a major sector of the Gillam workforce and likely reflects the extent to which Manitoba Hydro is the major employer in the community.

Management, business, finance and administration occupations employed about seven percentage points less of Gillam's workforce than Manitoba's (Table 3-7). Although some Manitoba Hydro jobs in the community encompass management and administrative positions, the bulk of these positions are based out of Winnipeg and other centres. Most Hydro-related employment in Gillam was related to electrical generation, maintenance and skilled trades.

The percentage of Gillam's workforce employed by health occupations is about 1.5 percentage points lower than Manitoba's (see Appendix 3A, Table 3A-9). To some extent, this reflects the position of Gillam relative to Thompson, which is the regional health services centre. While the Burntwood Regional Health Authority provides most health services in Gillam, the existence of major hospital services in Thompson precludes the need for a full range and/or duplicate services in Gillam.



Source: Statistics Canada 2002, 2011a.
Notes:

- Complete table provided in Appendix 3A (Table 3A-9).
- Categories have been organized and rolled-up by InterGroup Consultants for ease of comparison.
- Northern Aboriginal residents defined as Aboriginal Identity Population in Statistics Canada Census Divisions 19, 21, 22 and 23.
- Regional Study Area defined as Statistics Canada Census Divisions 19, 21, 22 and 23.
- "Management, business, finance and administration occupations" is sum of "Management occupations" and "Business, finance and administration occupations" in the corresponding table in Appendix 3A.
- "Social science, health, education, government service and religion" is sum of "Health occupations" and "Social science, education, government service and religion" in the corresponding table in Appendix 3A.

Figure 3-7: Labour Force by Occupation Classification in Gillam and Comparison

3.3.1.3.4 Skills Pertinent to Project Construction Employment

Gillam currently enjoys low unemployment rates, primarily because of the close association with Manitoba Hydro. There are some FLCN Members who live in Gillam who are eligible for the first order hiring preference provisions and are likely to gain employment on the Project. These residents are already included in the KCNs portion of the analysis and are therefore not included here. Of the remaining

residents, there are few people (not already working for Manitoba Hydro) available for work with the skill sets required who might be attracted to employment on the Project.

3.3.1.4 Thompson

While Thompson's economy is more diverse than that of Gillam, employment levels are heavily influenced by Vale's mining operations, which remain a primary industrial base for the local economy. Other growth is resulting from an emerging cold-weather testing industry, ongoing mineral exploration and a growing role as a regional transportation hub. Thompson is one of the Regional Study Area's main health and education service centres, providing extensive health care services and is the main location for the University College of the North. Thompson also includes major provincial and federal services for the Regional Study Area, providing access to federal and provincial programs. Thompson currently enjoys low unemployment rates, with many employment opportunities available across a wide variety of industries and job categories.

This section presents the employment and training data for Thompson, derived from Statistics Canada 1991, 2001 and 2006 Census data (Statistics Canada 1992, 2002, 2007a). All data have been rounded. For comparison, the Thompson data are discussed in reference to comparison populations — northern Aboriginal residents, the Regional Study Area and Manitoba as a whole. The Regional Study Area is approximated by examining Census Divisions 19, 21, 22 and 23 and these data have been summed and weighted, where necessary. Northern Aboriginal residents are characterized as those residents of Regional Study Area who self-identify as Aboriginal. Regional Study Area and Manitoba labour force characteristics are based on 20% samples.

A community-based KPI program was undertaken in Thompson to obtain first-hand data, where available, and perspectives from those knowledgeable about employment and training. The KPI program took place in 2008, 2009 and 2010. For the most part, the interviews were undertaken with community members.

3.3.1.4.1 Labour Force

The potential labour force in Thompson, defined as the population 15 years and older, experienced a decline between 1991 and 2001 of about 11%, from 10,620 in 1991 to 9,495 in 2001 (see Appendix 3A, Table 3A-10). This was likely due to a reduction in the required labour force employed by Vale over the decade. Since employment in Thompson has been traditionally linked to mining, much of the decrease in the potential labour force should reflect the out-migration of former Vale employees and their families from the community in the mid-1990s. In the period 2001-2006, the potential labour force in the community rose by about three per cent (see Appendix 3A, Table 3A-10). Commitments and activities by Vale, as well as other major projects in and around the city, have continued to increase the potential labour force since 2006.

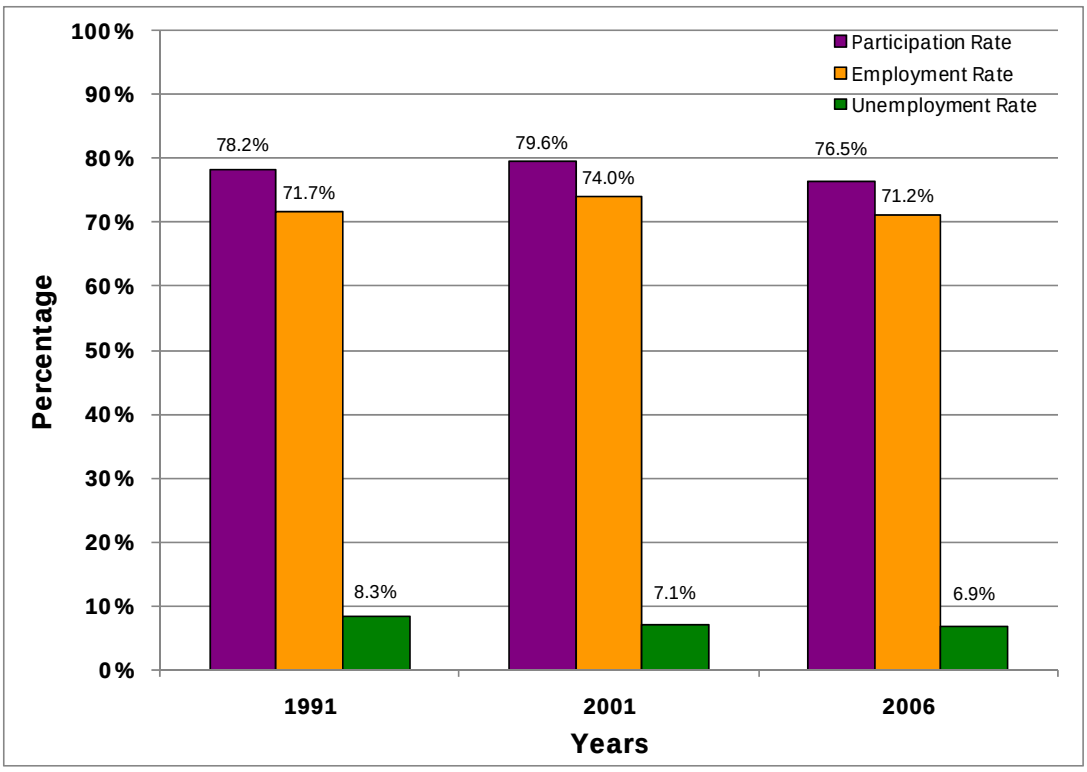
In November 2010, Vale announced that they would be closing the nickel smelter and refinery in Thompson. This may represent a loss of approximately 500 jobs. Vale expects to pursue development of additional mine deposits in the region, thereby off-setting some of the job losses. Depending on the level

and type of job loss, the potential labour force requirements may decline, leading to labour force and population losses.

Although the potential labour force and population of Thompson fell over the period 1991-2001, the participation rate remained relatively stable over this time, increasing by about one percentage point over the period 1991 - 2001, and decreasing by about three percentage points over the period 2001-2006 (Figure 3-8).

Employment rates in Thompson did not vary markedly from 1991, 2001 and 2006 although the number of individuals employed in the community declined by 645 over the period (see Appendix 3A, Table 3A-10). Partially due to a decline in the potential labour force from 1991 to 2001, the employment rate increased by about two percentage points, since fewer individuals remained to compete for employment. The employment rate declined by about three percentage points from 2001 to 2006.

The unemployment rate in Thompson declined about 1.4 percentage points over the period 1991-2006 (Figure 3-8).



Source: Statistics Canada 1992, 2002, 2007a.
Notes:

- Complete table provided in Appendix 3A (Table 3A-10).
- Participation rate refers to the labour force in the week (Sunday to Saturday) prior to Census Day (June 4, 1991; May 15, 2001; May 16, 2006), expressed as a percentage of the population 15 years of age and over.
- Employment rate refers to the number of persons employed in the week (Sunday to Saturday) prior to Census Day (June 4, 1991; May 15, 2001; May 16, 2006), expressed as a percentage of the total population 15 years of age and over.
- Unemployment rate refers to the number of unemployed persons, expressed as a percentage of the labour force in the week (Sunday to Saturday) prior to Census Day (June 4, 1991; May 15, 2001; May 16, 2006).

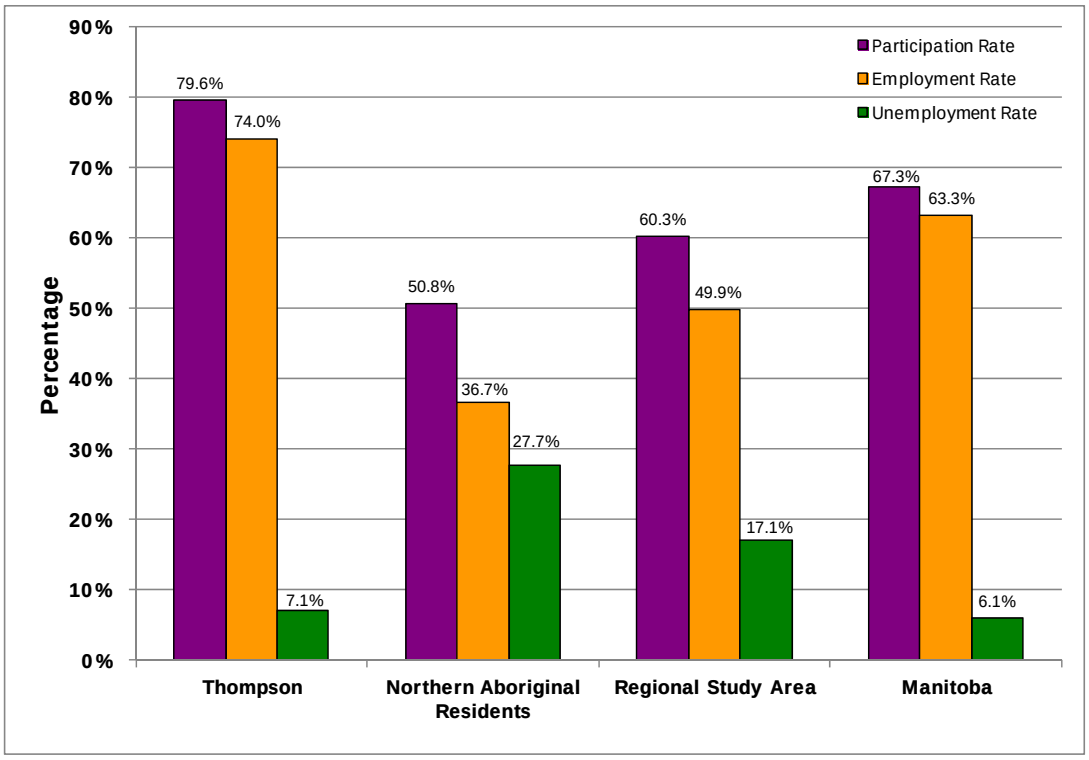
Figure 3-8: Change in Employment, Participation and Unemployment Rates in Thompson (1991, 2001, 2006)

In 2001, the participation rate in Thompson was greater than the rate of the comparison populations (Figure 3-9) about 30 percentage points greater than that of northern Aboriginal residents, nearly 20 percentage points greater than Regional Study Area residents and about 12 percentage points greater than Manitoba residents (for a more detailed analysis, see Appendix 3A, Table 3A-11).

The employment rate in Thompson was also greater than the employment rate in the comparison populations in 2001 (Figure 3-9). Compared to northern Aboriginal residents and Regional Study Area, Thompson's employment rate was about 37 and 24 percentage points greater, respectively. Thompson's employment rate was about 11 percentage points greater than the rate of Manitoba residents.

The unemployment rate in Thompson in 2001, compared to comparison populations, reflected the strong presence of Vale, as well as other associated employers in the community. Thompson's

unemployment rate was one percentage point higher than the rate for Manitoba as a whole in 2001 (Figure 3-9).



Source: Statistics Canada 2002, 2011a.
Notes:

- Complete data set provided in Appendix 3A (Table 3A-11).
- Northern Aboriginal residents defined as Aboriginal Identity Population in Statistics Canada Census Divisions 19, 21, 22 and 23.
- Regional Study Area defined as Statistics Canada Census Divisions 19, 21, 22 and 23.
- Participation rate refers to the labour force in the week (Sunday to Saturday) prior to Census Day (May 15, 2001), expressed as a percentage of the population 15 years of age and over. Employment rate refers to the number of persons employed in the week (Sunday to Saturday) prior to Census Day (May 15, 2001), expressed as a percentage of the total population 15 years of age and over.
- Unemployment rate refers to the unemployed persons, expressed as a percentage of the labour force in the week (Sunday to Saturday) prior to Census Day (May 15, 2001).

Figure 3-9: Employment, Participation and Unemployment Rates in Thompson and Comparison Populations (2001)

3.3.1.4.2 Education

Education is an important factor in influencing the extent to which Project employment opportunities may be filled by the labour force in Thompson. Basic education levels for Thompson were determined using the 2001 Census of Canada. In 2001, the Census of Canada determined the highest level of education attained for individuals aged 20 years and over. Data are presented below in Table 3-8 (for a more detailed analysis, see Appendix 3A, Table 3A-12).

In 2001, about two-thirds of the residents of Thompson over age 20 had a high school certificate or higher education, which was only slightly more than for residents of Manitoba as a whole. Thompson had the lowest proportion of residents with less than a high school education out of all of the comparison populations (Table 3-8).

Table 3-8: Highest Level of Education in Thompson and Comparison Populations (2001)

Characteristics[1,2,3,4]	Thompson	Comparison Populations		
		Northern Aboriginal Residents[5]	Regional Study Area[6]	Manitoba
Less than high school certificate	33.6%	59.6%	48.2%	34.4%
High school certificate or equivalent	9.5%	5.8%	8.5%	11.4%
Trades certificate or diploma	15.6%	n/a	13.0%	11.7%
Some post-secondary education	n/a	10.4%	10.2%	11.4%
Post-secondary education certificate, diploma, degree, *etc.*[7,8]	29.7%	24.1%	20.2%	31.0%

Source: Statistics Canada 2002, 2011a.
Notes:
1. Highest level of education is based on population 20 years and over for Thompson, Regional Study Area and Manitoba; and for 25 years and over for Northern Aboriginal Residents populations.
2. Complete data set provided in Appendix 3A (Table 3A-12).
3. Categories have been organized and rolled-up by InterGroup Consultants for ease of comparison.
4. Columns may not add to 100% due to rounding and/or unavailable data (n/a).
5. Northern Aboriginal residents defined as Aboriginal Identity Population in Statistics Canada Census Divisions 19, 21, 22 and 23.
6. Regional Study Area defined as Statistics Canada Census Divisions 19, 21, 22 and 23.
7. For columns "Thompson", "Regional Study Area" and "Manitoba", "Post-secondary education certificate, diploma, degree, *etc.*" is the sum of "Post-secondary non-university certificate or diploma", University certificate or diploma" and "University degree" in the corresponding table in Appendix 3A.
8. For column "Northern Aboriginal Residents", "Post-secondary education certificate, diploma, degree, *etc.*" is the sum of "Trades, college or university certificate or degree (below bachelor's level" and "University degree" in the corresponding table in Appendix 3A.

A greater percentage of Thompson residents had trades certificates or diplomas than Regional Study Area and Manitoba residents, by about 2.5 and four percentage points, respectively. In addition, a greater percentage of Thompson residents had a post-secondary education certificate, diploma, degree or other as compared to northern Aboriginal and Regional Study Area residents, but less than the percentage for

Manitoba as a whole (Table 3-8). For a more detailed breakdown of education, see Appendix 3A, Table 3A-12.

Over 45% of the population of Thompson over 20 years of age had some post-secondary training or achieved a trade or post-secondary non-university certificate or diploma, with over 12% of the population holding a university degree and over, and 15% holding a university or non-university certificate or diploma (Appendix 3A, Table 3A-12). These figures illustrate the high level of education attained by residents of Thompson; in contrast, less than eight per cent of Regional Study Area residents had university degrees in 2001. Similarly, approximately 12% of residents of the Regional Study Area and about 17% of Manitobans held a university or non-university certificate or diploma at that time. The rate of Thompson residents with a university degree at over 12% was comparable to the 14% for the Province of Manitoba as a whole.

Approximately 14% of high school graduates (about 10% of residents over 20 years of age) had not continued their education beyond the high school level in 2001. Of those who had some post-secondary education, over 23% had attained a trades certificate or diploma, nearly 16% of the total population aged 20 and over. This figure exceeds both the 12% of Manitobans and the 13% of residents of the Regional Study Area with a trades certificate or diploma (see Appendix 3A, Table 3A-12).

According to school district officials, the technical vocational, trades certification and apprenticeship programs are among the most popular programs available in Thompson schools. Several programs, including the senior year's apprenticeship and work experience programs, are run collaboratively with Vale and Manitoba Hydro, providing students with valuable experience in a workplace setting. Programs run at R.D. Parker Collegiate in Thompson include auto mechanics, aircraft maintenance engineer, heavy duty mechanics, small engine repair, carpentry, cosmetology, food services certification, as well as computer-aided design and power and diesel mechanics training. In addition, the school is working to introduce Emergency Medical Rescue and Health Care Aide programs, including college accreditation, as well as other programs in collaboration with local employers (Thompson KPI Program 2008-2010).

While the local school district provides a number of opportunities for skills training and development in the community, local unions and employers, such as Vale and Manitoba Hydro, have also been involved in a number of initiatives to improve education levels, especially in trade certification, in the community.

The Thompson campus of the University College of the North, along with locations in The Pas and 12 regional learning centres throughout the Regional Study Area, provide more than 65 degree, diploma and certificate programs. Several interviews were conducted with local educators and other stakeholders in the Thompson area, with many noting that the University College of the North campus required upgrading in order to accommodate the large number of potential students enrolling in courses. The main issues have been a lack of housing for prospective students, as well as a lack of classroom and administrative spaces. Indeed, a new campus in Thompson, including on-campus housing for students, has been under discussion for several years, with a commitment from the Government of Manitoba of $82 million announced in April 2010. The first phase of construction is set to begin in the fall 2010, with new classrooms, laboratories, a new library, a childcare centre with space for 75 children, several ceremonial and meeting spaces; and a 24-unit housing development slated to be built. This construction should increase student capacity at the Thompson campus (Government of Manitoba 2010b). University

College of the North administrators expect that student enrolment will increase to approximately 1,000 within ten years.

Although the workforce in Thompson is relatively well educated, employers in the community continue to have difficulties attracting educated workers. For some employers, basic literacy, numeracy, logic and aptitude testing, as well as high school or General Educational Development certification remain important skill gaps. Employers cite the need for more adult basic education and workplace skills, as well as more complex skill sets, such as trades certification and professional training, in order to fill the positions that they offer. Due to the relatively low unemployment rates in the community, finding qualified staff is a major concern and some employers seek potential workers from outside northern communities, out-of-province and even internationally.

In general, most employers agree that individuals who were born or grew up in the north are more likely to stay in the north and, therefore, northern residents are the preferred source of employees. Companies, such as Vale and Manitoba Hydro, are investing in training programs for local and northern residents, specifically among the Aboriginal population, in order to improve the long-term viability of a skilled northern workforce (Thompson KPI Program 2008-2010).

According to some reports, several employers, including the Burntwood Regional Health Authority and Vale, have been flying in workers for shifts and contract work due to the difficulty of attracting local staff with the necessary qualifications (Thompson KPI Program 2008-2010).

3.3.1.4.3 Characteristics of the Workforce

The economic structure of Thompson, a community with strong ties to the mining sector, as well as the largest service centre in the Regional Study Area, has some unique attributes typical of an important regional centre with a rich resource base. Table 3-9 and Figure 3-10 present the distribution of occupations in Thompson in 2001 compared to northern Aboriginal residents, the Regional Study Area and Manitoba as a whole (for a more detailed analysis, see Appendix 3A, Table 3A-13).

As illustrated by Table 3-9 and Figure 3-10, occupations in the sales and services sector employed the largest percentage of Thompson's workforce (at nearly 25%) compared to other occupations in 2001. This percentage of employment by sales and service occupations was nearly nine percentage points below the northern Aboriginal workforce, about 1.5 percentage points below the Regional Study Area workforce and slightly larger than the Manitoba labour force (about one percentage point). This reflects the fact that Thompson is the major centre for retail and other services in the Regional Study Area. This was confirmed through the community-based research program (2008-2010) during which respondents in a number of communities referred to Thompson as the main shopping and services hub for the Regional Study Area.

The second largest employers in Thompson were those with occupations related to management, business, finance and administration in 2001 (Table 3-9). These occupations employed a slightly greater percentage of Thompson's workforce than either the northern Aboriginal or the Regional Study Area workforces, but about six percentage points less than the workforce of Manitoba as a whole.

In 2001, the third largest employers in Thompson were those having occupations related to social science, health, education, government service and religion (Table 3-9). These occupations employed

about two percentage points more in Thompson as compared to the Manitoba workforce. This reflects the fact that, as the major service centre for the Regional Study Area, Thompson is the location of a number of Provincial and Federal government positions, as well as the University College of the North and Thompson Regional Hospital, among other employers. According to the Manitoba Civil Service Commission, from 2000 to 2008 the Provincial Government employed an average of between 296 and 367 full-time equivalent positions each year[1]. The School District of Mystery Lake reported a total of 448 employees in Thompson in 2008 (Thompson KPI Program 2008-2010). Despite being important to the local economy, the rate of Thompson residents employed in this sector remains slightly lower than the proportion of the populations of the Regional Study Area (about 16%) and for northern Aboriginal residents (18%).

Occupations in trades, transport and equipment operators and related occupations were the fourth largest employers of the Thompson workforce in 2001 (Table 3-9). These occupations employed about 1.5 percentage points less of the Manitoba workforce than the Thompson workforce. The sizable percentage of the workforce employed by these occupations is related to Thompson's strong connections to Vale and other resource-based pursuits, as well as a variety of contractors. According to Vale, the company employed an average of 1,507 individuals each year from 2000 to 2008, with an annual average of 1,101 hourly employees between 2000 and 2007. These numbers were on the rise in recent years, though below the former highs experienced in the early 1980s and early 1990s when the company employed over 2,000 employees annually. The company also reported an average of 232 contractors each year between 2003 and 2007[2] and suggested that, in the next few years, this number could expand to over 1,000 contractors at a time (Thompson KPI Program 2008-2010).

The trucking sector in Thompson, including Gardewine North, has reported increases to freight hauling into Thompson, while large local contractors, such as Smook Brothers, have increased their staff levels and operations (Thompson KPI Program 2008-2010).

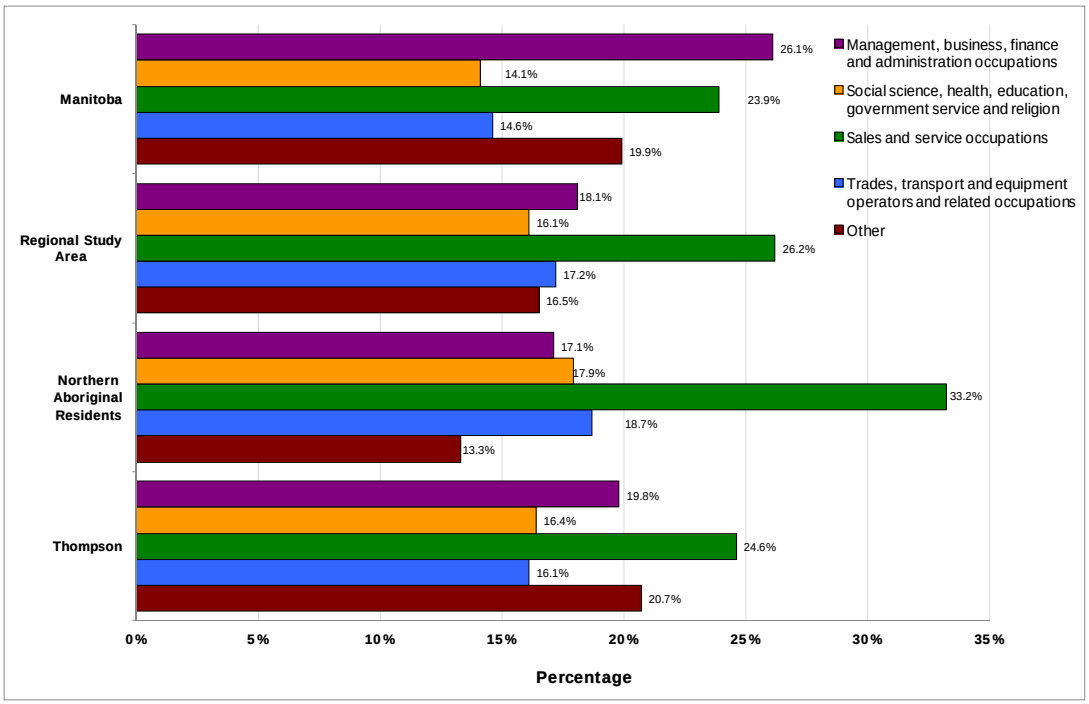
[1] Average number of full-time equivalent positions calculated by InterGroup Consultants based on data provided by the Manitoba Public Service Commission for 2000 to 2008. These numbers are presented in a range due to the seasonal nature of some positions.

[2] Average employed contractors calculated by InterGroup Consultants based on data provided by Vale.

Table 3-9: Labour Force by Occupation Classification in Thompson and Comparison Populations (2001)

Characteristics[1,2,3,4]	Thompson	Comparison Populations		
		Northern Aboriginal Residents[5]	Regional Study Area[6]	Manitoba
Not applicable[7]	2.2%	n/a	5.8%	1.4%
All occupations[8]	97.6%	n/a	94.1%	98.6%
Management, business, finance and administration occupations[9]	19.8%	17.1%	18.1%	26.1%
Sales and service occupations	24.6%	33.2%	26.2%	23.9%
Social science, health, education, government service and religion[10]	16.4%	17.9%	16.1%	14.1%
Trades, transport and equipment operators and related occupations	16.1%	18.7%	17.2%	14.6%
Other	20.7%	13.3%	16.5%	19.9%

Source: Statistics Canada 2002, 2011a.
Notes:
1. Data is based on total labour force 15 years and over.
2. Complete table provided in Appendix 3A (Table 3A-13).
3. Categories have been organized and rolled-up by InterGroup Consultants for ease of comparison.
4. Columns may not add to 100% due to rounding and/or unavailable data (n/a).
5. Northern Aboriginal residents defined as Aboriginal Identity Population in Statistics Canada Census Divisions 19, 21, 22 and 23.
6. Regional Study Area defined as Statistics Canada Census Divisions 19, 21, 22 and 23.
7. Not available for Northern Aboriginal Resident population.
8. Not available for Northern Aboriginal Resident population.
9. Row "Management, business, finance and administration occupations" is sum of rows "Management occupations" and "Business, finance and administration occupations" in the corresponding table in Appendix 3A.
10. Row "Social science, health, education, government service and religion" is sum of rows "Health occupations" and "Occupations in social science, education, government service and religion" in the corresponding table in Appendix 3A.



Source: Statistics Canada 2002, 2011a.
Notes:

- Complete table provided in Appendix 3A (Table 3A-13).
- Categories have been organized and rolled-up by InterGroup Consultants for ease of comparison.
- Northern Aboriginal residents defined as Aboriginal Identity Population in Statistics Canada Census Divisions 19, 21, 22 and 23.
- Regional Study Area defined as Statistics Canada Census Divisions 19, 21, 22 and 23.
- "Management, business, finance and administration occupations" is sum of "Management occupations" and "Business, finance and administration occupations" in the corresponding table in Appendix 3A.
- "Social science, health, education, government service and religion" is sum of "Health occupations" and "Social science, education, government service and religion" in the corresponding table in Appendix 3A.

Figure 3-10: Labour Force by Occupation Classification in Thompson and Comparison Populations (2001)

In 2007, Vale committed to keeping the Thompson mines operational until at least 2027, as well as investing approximately $750 million in the Thompson operations (Government of Manitoba 2007a; Service Canada 2008). The work completed to date, as well as additional commitments by Vale, has been a major stimulus to the local economy in Thompson. However, the November 2010 announcement to close the refinery and smelter by 2015 may affect the overall labour market in this category in future years.

However, residents suggest that, while the community was traditionally dependent on Vale, in recent years the local economy has been shifting towards a service-based economy with a more diverse base. The city is experiencing a period of economic growth as a result of the following:

- The Wuskwatim Generation Project (construction phase);
- Cold-weather testing;
- Growth in the transportation industry (such as aviation, shipping, road transport and rail); and
- Growth in the health and education sectors.

This has had effects on housing costs and availability, as well as wages across all sectors, including sales and service jobs. For example, wages in restaurants have been raised to between $12 and $14 per hour. This recent economic growth in the local economy has had an effect on the Thompson labour force (Thompson KPI Program 2008-2010).

The category of health occupations is an area in which the proportion of the Thompson workforce (about 5%) is comparable to that of the province as a whole (6%) (see Appendix 3A, Table 3A-13). While the City of Thompson is the major service centre in the Regional Study Area and the location of the regional hospital, due to the large workforce in the city, this sector represents a relatively small proportion of the workforce. In absolute numbers, however, more than 350 individuals were employed in the health sector in 2001, rivalling the total number employed in processing, manufacturing and utilities in the community. According to the Burntwood Regional Health Authority, in 2008 the Burntwood Regional Health Authority employed 519 individuals in Thompson.

3.3.1.4.4 Project Employment

Thompson currently enjoys low unemployment rates, with many employment opportunities available across a wide variety of industries and job categories. A large proportion of this workforce is employed in trades, transport and equipment operations and related occupations in 2001, which are areas that are suitable for Project construction. Actual Project employment on for Thompson residents will depend on the state of the city's economy at the time Project construction is underway.

3.3.2 Business Opportunities – Local Study Area

This section describes current businesses in the Local Study Area, particularly those types of businesses that benefit from participation in Project construction. Businesses owned by any of the KCNs partner First Nations or their Members would be provided the opportunity to negotiate directly to undertake a subset of contracts for construction of the Project (DNCs). In addition, businesses located within the Local Study Area may see opportunities to provide goods and services to contractors. Associated retail/wholesale goods and services, accommodation and food services and the transportation sector could also benefit from the large numbers of people moving to and from the construction site and spending leisure time in local communities.

3.3.2.1 Keeyask Cree Nations

Aboriginal businesses (including those owned by the KCNs communities) are eligible to obtain Project construction contracts through Manitoba Hydro's Northern Procurement Policy. Under this policy First Nation-owned businesses, Aboriginally-owned businesses and/or joint ventures may obtain contracts for work near their communities, or in the broader Regional Study Area.

KCNs businesses that could potentially participate in Keeyask-related contracts include the following:

- Amisk Construction – This joint venture is between CNPLP #2, a Limited Partnership owned by the CNP communities (TCN and WLFN), and Sigfusson Northern Ltd. They indicate capacity to undertake site preparation and camp maintenance, clearing and construction of access roads and reservoir clearing.
- Ininew Limited Partnership – This partnership is based in Winnipeg and provides project management services in civil engineering and architecture, as well as community planning services. Ininew is owned and operated jointly by the Mosakahiken Cree Nation and TCN. The parthernship has been engaged in numerous projects in First Nation communities throughout Manitoba and has participated in environmental site assessments with Manitoba Hydro (Ininew 2010; updated by CNP June 2012).
- TC Building Materials Limited Partnership – This partnership is owned by TCN and is headquartered in Winnipeg. It provides building supplies and constructs buildings, including houses and ready-to-move houses for First Nations and other clients. Services include architecture, drafting and engineering services. Specific projects that TC Building Materials has been engaged in include an addition to the construction camp at the Kelsey generating station, modular housing units in Split Lake and construction of housing and buildings for the RCMP and Manitoba Infrastructure and Transportation.
- War Lake Construction – This company is operated by WLFN and is CORE certified. War Lake Construction has been active in the past few years building a road from Ilford to War Lake and contracting with the Provincial Government to build the winter road.
- Tataskweyak Construction Limited Partnership – This partnership is owned by TCN and is located in Split Lake. It provides services to businesses and government, including road building and maintenance, water and sewer, soil remediation, dyke construction, snow removal and house construction.
- United Cree Construction Joint Venture – This joint venture represents a business arrangement between TCN and the James Bay Cree and is associated with the Cree Construction and Development Company based in Québec. It undertook riprap work for Manitoba Hydro on the shorelines at Split Lake and built the local church.
- ESS-TCS Limited Partnership– This is a joint venture between TCN and ESS (part of Compass Group Canada) that provides camp services. ESS-TCS undertook a contract at the Project site.

- Iron North Limited Partnership– a 100% TCN owned business involved in the purchase and leasing of heavy construction equipment to contractors.
- Keeyask Emergency Medical Services Joint Venture- This is a joint venture between CNPLP # 3, a Limited Partnership owned by the CNP communities (TCN and WLFN), and Criti Care EMS Inc., an emergency medical services provider, formed to provide these services at the Keeyask construction site.
- Keeyask Maintenance Services Joint Venture- This is a joint venture between CNPLP #3, a Limited Partnership owned by the CNP communities (TCN and WLFN) and Newton Mechanical Inc. formed to provide camp maintenance services for Keeyask camps.
- Aboriginal Strategies Limited Partnership (ASI) – This is 80% owned by the TCN Trust and 20% owner by TCN. ASI is a financial management company providing a wide range of professional services; and has the capability of supplying services to Manitoba Hydro and the joint venture companies that are involved in Keeyask DNCs. ASI provides services in the following areas: accounting and financial advice; accountability assessments; on-site training; system analysis and computer installations; business evaluations; First Nation taxation issues and others.
- Northstream Communications Limited Partnership– a TCN-owned internet service provider serving TCN and WLFN. It could potentially provide internet services to Keeyask construction camps.
- Keewatin Railway Company Limited (KRC) – jointly owned by WLFN, TCN, and Mathias Colomb Cree Nation. This railway runs between The Pas and Pukatawagan. KRC provides the full range of track maintenance services, including gauging and ballast, to Manitoba Hydro at Kelsey and the Laurie River generating stations, to the Hudson Bay Railway and to Vale at Thompson. It is available to provide services for the Keeyask and Conawapa projects.
- Tataskweyak Gas Bar – providing local retail gasoline services to TCN and as a supplier to Penner Oil, TGB could provide gasoline and diesel fuel to construction companies and workers.
- FLCN partnership with Sodexo – FLCN has entered a partnership to operate the Mile 326 restaurant (formerly the Aurora Gardens restaurant). This partnership has also been contracted to operate the Conawapa camp.
- FLCN/Smook Contractors – Memorandum of Understanding to form a joint venture for construction activities.
- FLCN/Kleysen Transportation – Memorandum of Understanding to form a joint venture for transportation and materials management.
- FLCN/Multicrete – Memorandum of Understanding form a joint venture for concrete supply and batch plant.
- FLCN/Stefan Homes – Joint venture in relation to construction of buildings.

- FLCN – Has a Memorandum of Understanding with Hartman Construction based in Ashern, Manitoba to bid on contracts related to construction and heavy equipment operation (FLCN KPI Program 2009-2010).
- Fox Lake Contracting – Currently employs eight to ten FLCN Members on a seasonal basis to clear logs and debris along dykes and waterways (FLCN KPI Program 2008-2010).
- YFFN partnership with Sodexo – York Factory First Nation has an existing partnership for camp services at the Kelsey generating station and has used this arrangement as a means of training YFFN Members. YFFN is currently exploring options for taking over management of catering services at the Kelsey Generating Station (YFFN KPI Program 2009-2010).

In addition to the construction-related entities noted above, there are also establishments attached to the KCNs communities that provide accommodations. These hotels have the capacity to cater to visiting consultants and specialists, government employees, contractors and others:

- TCN Kistepinanek Hotel is located in Split Lake and is owned by TCN. It is a 14-unit hotel with a 32-seat restaurant that provides catering services for construction crews carrying out work near the community. This could provide accommodation for Project-related workers if needed.
- TCN ows the Wawatay Inn (a guest housing facility for First Nations patients and families in Thompson).
- WLFN has a two bedroom lodge that can be rented by visitors, and a trailer that can accommodate up to six people. In addition, the former Awasis Learning Centre is available for meeting space and accommodations for up to 15 people. This facility is equipped with a commercial kitchen.
- WLFN has plans to expand the Mooseocoot Convenience Store and Gas Bar to include a motel to accommodate visitors.
- York Landing Hotel is located in York Landing (*Kawechiwasik*) and is owned by YFFN. It provides accommodations and some meal services to construction workers and visiting consultants.

The availability of retail and grocery services varies among the KCNs communities, as in the case of other types of establishments. Split Lake is serviced by a Northern Store and the Tataskweyak Gas Bar, and WLFN recently opened the Mooseocoot Convenience Store and Gas Bar.FLCN has periodically operated the Fox Lake Groceteria located in Fox Lake (Bird). Fox Lake Lumber and Hardware is located in Gillam. YFFN owns and operates the Ripple River Store in York Landing (*Kawechiwasik*).

In terms of business development, the KCNs communities are engaged in the North Central Development Board (two Members from each community) that operates under the umbrella of Aboriginal Business Canada and Western Economic Diversification Canada to assist new entrepreneurs and community corporations with start up. The entrepreneurs may work with Aboriginal Business Canada to build competitive, sustainable businesses, with the provision of financial incentives for those who are eligible (North Central Development 2010).

3.3.2.2 Gillam

The Town of Gillam is economically linked to Manitoba Hydro as the company's key operations and service centre in the Regional Study Area. While the community has close historical ties with FLCN (Gillam is home to FLCN Members in the past and today), as well as the Canadian National Railway/Hudson Bay Railway, Manitoba Hydro's activities in the Local Study Area have had the most profound effects on the town and its residents since the mid-1960s. As the largest employer in the community, the presence of Manitoba Hydro provides a relatively affluent population base to support local businesses and amenities.

Workers in Gillam tend to be permanent staff engaged in plant operation and maintenance, although the population of Gillam has occasionally experienced considerable fluctuations as a result of a mobile, temporary workforce entering the community to develop projects. Many individuals in the community believe that the average person resides in Gillam for approximately five years, with only about 30% of the population in 2008 considered lifetime residents (HTFC 2008). The town's population can therefore be characterized as one that has a degree of stability and some long-time residents, with periodic increases resulting from new construction projects. FLCN Members have long considered Gillam a home community, in addition to Fox Lake (Bird).

Manitoba Hydro is the major landowner in the town and provides company-owned housing to staff at a subsidized rate. The company owns most homes in the community; however, there are some houses owned by FLCN, private individuals and public sector groups such as Frontier School Division, the RCMP and others (see Section 4.3.2.2). There is currently a shortfall of available housing to meet Manitoba Hydro's current needs and those projected for the future, even without the Project. Manitoba Hydro is currently planning to address current and future needs. The lack of private sector housing is a limitation for employers other than Manitoba Hydro, as well as for many FLCN residents.

Due to Gillam's historic and economic ties to Manitoba Hydro development in the Local Study Area, community members have considerable knowledge and experience in the fields of construction and contracting services. Major businesses in this sector include Gardon Construction Ltd. and T and E Zelen Construction, with Gardewine North (based in Winnipeg with a depot in Thompson) providing supplying, shipping and hauling services. Calm Air International Ltd. (based in Thompson) and Gillam Air Services Ltd. provide chartered flights and freight delivery.

Although there is relative affluence among Manitoba Hydro employees in the town, the retail and services sector in Gillam remains limited to only a few stores and restaurants providing basic goods and services. Retailers in the community include the Gillam Co-op grocery store, Fox Lake Lumber and Hardware, as well as the Trapper Shack, which offers souvenirs, liquor, flowers and giftware. Restaurant services are available at the town's two motels, the Mile 326 and the Gillam Motor Inn. According to local residents, the lack of options is related to a number of factors, such as a low unemployment rate, few available homes and difficulty finding dependable and qualified staff. Several business owners remarked that running a business in Gillam is not easy because, "…people don't shop here – they shop in Thompson and Winnipeg." Similarly, local business owners stated that the costs of doing business in Gillam, in terms of wages and transportation, are prohibitive and make prices too high for local

consumers. Nevertheless, residents are optimistic that plans for a new shopping mall, as well as continued growth in the community, will result in broader retail options, particularly clothing (Gillam KPI Program 2008-2010).

One area in which the local business sector remains active is the hospitality industry. The town's two motels report high occupancy rates, even after recent expansion, with close to 100% occupancy most of the time. Motel staff indicated that the majority of their clientele are employees of Manitoba Hydro and the Hudson Bay Railway (Gillam KPI Program 2008-2010).

3.3.2.3 Thompson

The City of Thompson has become a major service centre for the Regional Study Area, with capacity in the construction, transport, hospitality and retail sectors and an expanding variety of related businesses as the local economy continues to diversify.

The local construction and transport industries have extensive experience in the mining sector and increasing experience working on hydroelectric projects in the Regional Study Area. Major capital projects, such as infrastructure programs and construction projects in the community, as well as anticipated long-term investments in mining and mineral exploration by Vale (despite the refinery and smelter shutdown), are attracting other major businesses and resulting in an expanded variety of businesses in Thompson (Thompson KPI Program 2008-2010).

After a decade of business growth and decline, the heavy construction sector is experiencing steady increases in activity, while transportation companies, such as Gardewine North, are expanding their operating capacity to keep up with demand. According to the community-based research program, some skilled workers in the construction and mining sectors are also branching out on their own as contractors or taking on part-time contracts (Thompson KPI Program 2008-2010).

Major trucking companies operating in Thompson at the time of writing included the following:

- Gardewine North;
- Kleysen Group LP;
- Jomac Transport; and
- Matechuk Trucking Ltd.

Major construction and building contractors in Thompson include:

- Smook Bros Ltd.;
- A and B Builders;
- La Furlane Construction;
- Mutschel Brothers;
- Northwest (Thompson) Ltd.;

- Wescan Electrical Company;
- Nor-Man Electrical/Mechanical Construction;
- Buddens Construction;
- JOA Construction Ltd.;
- TerraCrete; and
- Cree Construction and Development Company.

Although the resource sector is still a strong driver of the Thompson economy, recent years have seen diversification in the local business sector. The local economy is no longer tied exclusively to the highs and lows of the mining sector and the success of Vale. Thompson has become a centre for cold-weather vehicle testing, with major automobile manufacturers moving their testing facilities to the city; Thompson has also become a service centre and hub for the Regional Study Area. The transportation sector, including a number of aviation companies with headquarters or major offices in Thompson, is another growing industry in the community. Calm Air International, for example, has plans to expand its cargo facility in Thompson due to increased business in the Regional Study Area and the Arctic. Other major aviation service providers offering charter and freight services include Creeway Aviation, Gavkad Aviation, Missinippi Airways and Perimeter Aviation (Thompson KPI Program 2008-2010).

Economic growth in other sectors of the Thompson economy has resulted in development of the retail, service and hospitality industries. Local hotels, often booked to capacity by out-of-town contractors and companies, have expanded and new hotels have opened in an attempt to meet growing demand. Wages in the restaurant, retail and service sectors have increased as these industries and others face labour shortages, while some businesses have been forced to reduce their hours of operation due to a lack of staff. Housing prices in the city have risen over the last decade; and property values and rent have increased as a few former rental properties have been converted to condominiums and a number of apartment blocks have been renovated. There is also opportunity for capital investment in commercial and retail development in the Thompson market, with high demand for reasonably priced office and retail space. However, available land is a constraining factor. Findings of the community-based research program indicated that many members of the community hope that these developments will encourage local entrepreneurship and attract larger chain retail outlets (Thompson KPI Program 2008-2010).

As noted previously, Vale announced that it would be shutting down the Thompson nickel smelter and refinery by 2015. The anticipated job loss could, in part, be offset by announced increases in Vale mining activity in the Thompson area. The net effect of this development can be expected to include a slowing down of the Thompson economy, with consequent easing of inflationary pressures. Labour and business capacity will no longer be stretched and may in some cases move into a surplus situation. Under these circumstances, the Thompson economy should be better able to absorb the additional demands on businesses and other services arising from construction of the Project.

3.3.3 Income – Local Study Area

Income determines the standard of living (*e.g.*, quantity and quality of goods and services) available to both individuals and communities. Three indicators are provided in this section to better understand the incomes currently available across the Local Study Area. The following indicators were derived from Statistics Canada data sources:

- Average earned income by individuals;
- Average household income, placing individual earned income within the context of total household income; and
- Income sources, showing the distributions among employment, government payments and interest and other investments for each community.

The relationship among those sources is important for placing the employment generated by the Project into context.

3.3.3.1.1 Average Earned Income by Individuals

Average earned income is useful for understanding how much income Aboriginal people earn relative to the total population of Gillam, Thompson and other comparison populations. This helps identify variations in employment earnings within and among communities. Table 3-10 summarizes the average annual earned income by employed workers in these communities. Separate data are not available for northern Aboriginal residents and individual KCNs communities.

Table 3-10: Average Annual Earned Income for Aboriginal People in Gillam, Thompson and Comparison Populations (2001)

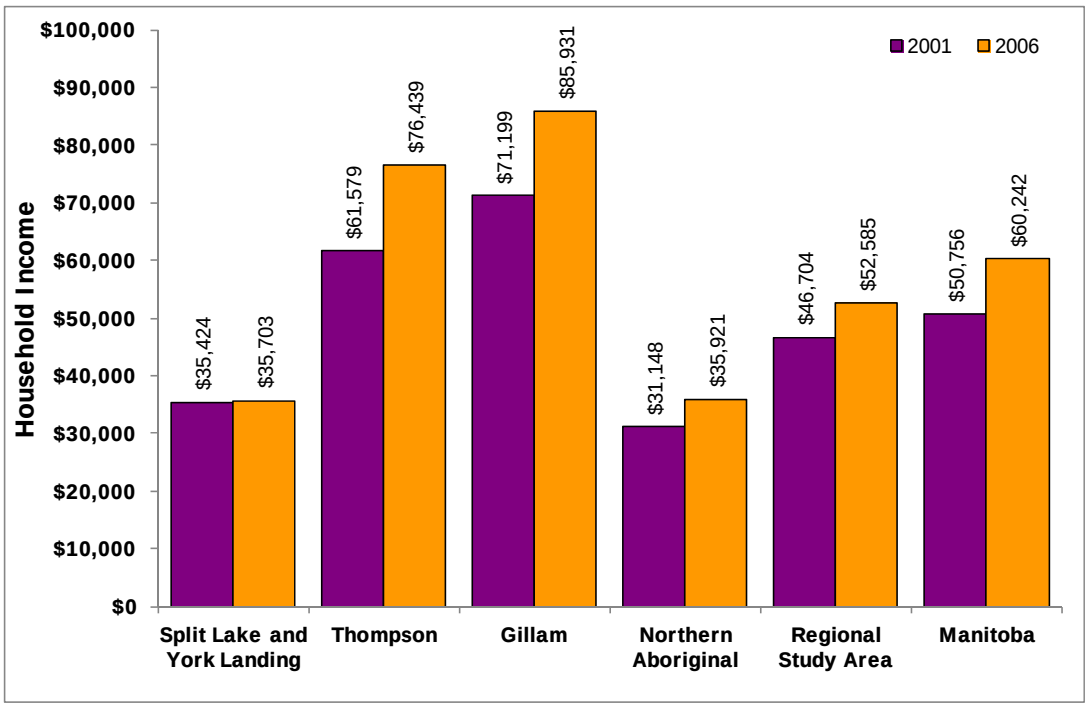
		Average Annual Earnings[1]	
Gillam	Total	$41,174	100%
	Aboriginal Workers	$29,233	71%
Thompson	Total	$33,583	100%
	Aboriginal Workers	$22,690	68%
Regional Study Area[2,3]	Total	$26,364	100%
	Aboriginal Workers	$17,998	68%
Manitoba	Total	$27,178	100%
	Aboriginal Workers	$19,271	71%

Source: Statistics Canada 2002.
Notes:
1. Average annual earning of Aboriginal Workers as a percentage of total workers from each comparison population.
2. Regional Study Area defined as Statistics Canada Census Divisions 19, 21, 22 and 23.
3. Based on a weighted average of Census Divisions 19, 21, 22 and 23 weighted by total people with earnings.

Average earned incomes varied from $17,998 - $41,174 in the populations presented in Table 3-10. On average, Aboriginal workers in these populations earned 68% - 71% of the average earnings of all workers. In addition, among these populations, the average Aboriginal annual earnings ranged from $17,998 – $29,223, while the average annual earning for all workers ranged from $26,364 - $41,174. Aboriginal workers in Gillam had the highest average annual earnings, 29% greater than Aboriginal workers in Thompson, 62% greater than Aboriginal workers in the Regional Study Area and 52% greater than Aboriginal workers in Manitoba as a whole.

3.3.3.1.2 Average Household Income

Average household income compares the total income received by households among the Local Study Area's communities. This helps identify variations in income levels among these communities. Figure 3-11 illustrates the average household income by community across the Regional Study Area compared with provincial and national averages.



Source: Statistics Canada 2002, 2007a.
Notes:

- Statistics Canada data are available for York Landing (*Kawechiwasik)* and Split Lake for 2001, and for York Landing (Kawechiwasik) in 2006. Data were not available for WLFN (at Ilford) and FLCN (at Fox Lake (Bird)).
- TCN and YFFN data has been averaged.
- Regional Study Area defined as Statistics Canada Census Divisions 19, 21, 22 and 23.
- Regional Study Area and northern Aboriginal figures based on a weighted average of Census Divisions 19, 21, 22 and 23.

Figure 3-11: Average Household Income (Canadian dollars) by Community and Comparison Populations (2001, 2006)

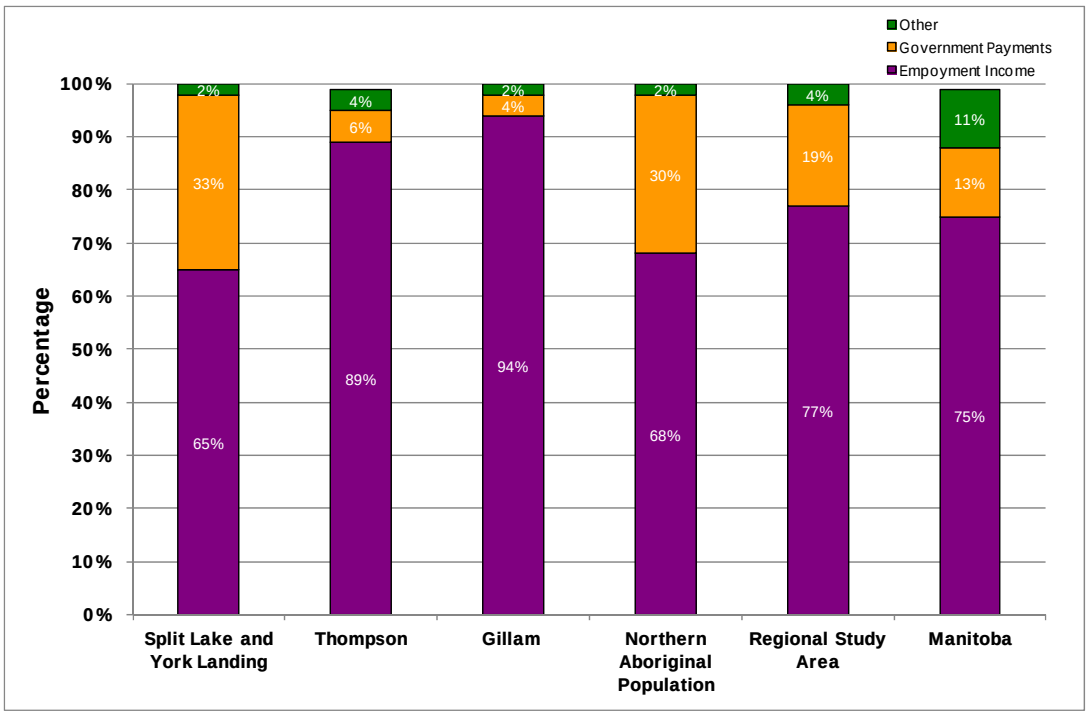
Average household incomes across the Regional Study Area have generally been rising. Between 2001 and 2006, the percentage of Regional Study Area households with incomes above $90,000 rose while the percentage of households with incomes less than $90,000 declined. Overall, average income increased 8% in the Regional Study Area.

While average household income for northern Aboriginal residents was similar to the average household income for Split Lake and York Landing (*Kawechiwasik*) in 2006, northern Aboriginal household income rose faster. From 2001 to 2006, northern Aboriginal household income rose by 15%, while Split Lake and York Landing (*Kawechiwasik*) average household income remained constant.

3.3.3.1.3 Income Sources

Income sources analysis compares the sources of household income among Local Study Area communities. Statistics Canada tracks three general categories, or sources, of income: employment and self-employment income, government payments and interest and other investment income. Of these three sources, most income tends to be generated by employment, followed by government payments, with interest and investment income playing a smaller role in the total earnings of a community. Figure 3-12 presents the average percentage of total income residents of each community or population receives from each income source For a more detailed analysis, see Appendix 3A, Table 3A-14.

In 2001 and 2006, KCNs communities experienced a higher reliance on government payments than the provincial average. Although KCNs data were incomplete, available data for Split Lake and York Landing (*Kawechiwasik*) indicate that the contribution of the sources of household income in KCNs communities remained fairly constant between 2001 and 2006. For a more detailed analysis, see Appendix 3A, Table 3A-14.



Source: Statistics Canada 2002.
Notes:

- Complete table provided in Appendix 3A (Table 3A-14).
- Statistics Canada data are available for York Landing (*Kawechiwasik*) and Split Lake for 2001, and for York Landing (*Kawechiwasik*) in 2006. Data were not available for WLFN (at Ilford) and FLCN (at Fox Lake (Bird)).
- TCN and YFFN has been averaged.
- Regional Study Area defined as Statistics Canada Census Divisions 19, 21, 22 and 23.
- Regional Study Area and northern Aboriginal figures based on a weighted average of Census Divisions 19, 21, 22 and 23.

Figure 3-12: Sources of Income by Local Study Area Communities and Comparison Populations (2001)

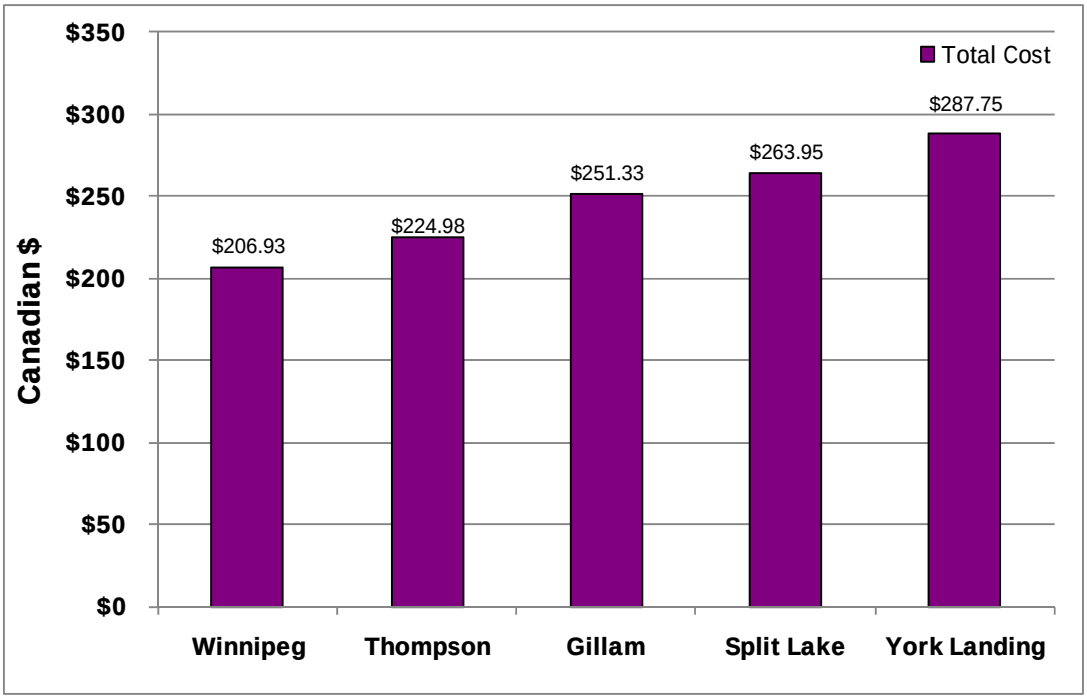
3.3.4 Cost of Living – Local Study Area

High living costs are a function of living in the Regional Study Area, primarily because of the increased cost of transporting goods long distances to small markets.

Three main categories of costs were identified and included in this cost of living analysis: the cost of food and household items, the cost of housing and the cost of transportation. These categories are the most likely to be potentially affected by the Project. (For a more detailed look at cost of living in the Local Study Area, see Appendix 3B).

With respect to the cost of food, Figure 3-13 illustrates the average weekly cost to feed a family of four according to the modified Revised Northern Food Basket survey results (for a more detailed analysis, see Appendix 3B, Table 3B-1). As the Regional Study Area's retail centre, costs are lowest in Thompson, which experiences a 9% premium over Winnipeg. The highest costs in the Local Study Area are found in the smallest, most remote communities without road access, such as York Landing (*Kawechiwasik*), where

residents pay as much as 40% more than in Winnipeg for food and household goods, and approximately 28% more than in Thompson (Table 3-11).



Source: InterGroup Consultants research based on RNFB Survey and Price Selection Procedure 2007.
Notes:
- Complete table provided in Appendix 3B (Table 3B-1).

Figure 3-13: Total Cost of Weekly Revised Northern Food Basket for Family of Four by Community (June-November 2009)

Table 3-11: Comparison of Weekly Revised Northern Food Basket Cost for a Family of Four by Community (June-November 2009)

Baseline Comparison[1]	Winnipeg	Thompson	Gillam	Split Lake	York Landing (*Kawechiwasik*)
Winnipeg Baseline	0%	9%	21%	28%	39%
Thompson Baseline		0%	12%	17%	28%

Source: InterGroup Consultants research based on RNFB Survey and Price Selection Procedure 2007
Notes:
1. Complete table provided in Appendix 3B (Table 3B-1).

With respect to transportation, costs within the Local Study Area are more difficult to quantify. Costs per trip to reach goods, services, employment and other amenities are highest in the most remote locations. Total costs, however, are reduced somewhat in small communities because of the reduced need for daily commutes. This may reduce fuel costs for those people who do not commute regularly on public highways.

Housing costs are generally more affordable in the remote communities than in the regional centres. In the KCNs communities, housing is provided to Members through Aboriginal and Northern Affairs Development Canada and Canadian Mortgage and Housing Corporation (CMHC) programs that are administered by the First Nations, thereby reducing housing-related rental or purchase costs. The exception would be the case of Canadian Mortgage and Housing Corporation homes that are held by the community, with rent being paid by band Members that are living in them[1]. In Gillam, Manitoba Hydro subsidies reduce employee housing costs to a level well below the provincial average. The highest housing costs are found in Thompson, which is currently experiencing a housing shortage with little housing construction on the horizon to absorb the growing demand. This is driving up the price of houses and apartments. It is also leading to some apartment owners converting apartments into condominiums to take advantage of the increased sale prices (Thompson KPI Program 2008-2010). This situation is likely to change given the proposed 2015 shutdown of the Vale's smelter and refinery.

Table 3-12 summarizes the findings of cost differentials among the communities in the Local Study Area, including the results of the Revised Northern Food Basket survey for each community, transportation and housing costs and the Federal Price Index Differential as a comparative measure[2]. As expected, employees in the most remote communities experience the highest Price Index Differential including allowances of 45% to 49% of salary. For further details on cost of living and the calculations discussed here, see Appendix 3B.

[1] There are currently 188 CMHC funded homes at TCN (Split Lake); 29 at FLCN (Fox Lake (Bird)); 20 in WLFN (Ilford); and 18 in YFFN (York Landing (Kawechiwasik)). All KCNs communities are experiencing housing shortages with resultant over-crowding. KCNs community Members have indicated that these programs are not adequate to meet the demand.

[2] See Section 3.2.4 for discussion on Price Index Differential.

Table 3-12: Summary of Costs of Living by Community

Community	Food and Household Items	Transportation	Housing	Federal Price Index Differential[1]
Split Lake (TCN)	28% above Winnipeg	Road / Bus Higher than Thompson	Subsidized by First Nation	20-24%
Ilford (WLFN)	n/a	Ice Road / Rail/ Air Charter Inconvenient	Subsidized by First Nation	30-34%
Fox Lake (Bird) (FLCN)	n/a	Road / Rail Inconvenient	Subsidized by First Nation	n/a
York Landing (*Kawechiwasik*) (YFFN)	39% above Winnipeg	Ice Road / Ferry / Air Expensive in spring and fall as air only option	Subsidized by First Nation	45-49%
Gillam	21% above Winnipeg	Road / Bus / Rail / Air Higher than Thompson	Manitoba Hydro Subsidizes Most Homes	25-29%
Thompson	9% above Winnipeg	Road / Bus / Rail / Air	Comparable to Winnipeg	<15%

Source: InterGroup Consultants research based on Calm Air 2011; Perimeter Aviation 2010; CMHC 2009; Greyhound Canada 2009; Manitoba Hydro 2009; Manitoba Real Estate Association 2009; MIT 2009; National Joint Council 2009; INAC 2007; Thompson Real Estate Board 2009; Town of Gillam 2009; VIA Rail 2009; Winnipeg Real Estate Board 2009.
Notes:
1. Represents the percentage difference (in a range) between prices in each community and those in Winnipeg (*e.g.*, for York Landing (*Kawechiwasik*), prices tend to be 45-49% higher than in Winnipeg).

3.3.4.1 Keeyask Cree Nations

As noted previously, the discussion on cost of living has been organized into sub-sections for food and household items, transportation and housing. Where feasible in the case of the KCNs, community-specific commentary is provided.

3.3.4.1.1 Food and Household Items

Costs for food and household items tend to be high for KCNs residents, compared to Thompson. All four KCNs communities are small markets, with limited purchasing power, and are remotely located. As a result, they experience a 17% to 28% premium for food and household items compared with Thompson, based on the RNFB survey results.

Of the KCNs communities, Split Lake experiences the smallest differentials in food and household costs when compared to Thompson. Split Lake is accessible year-round by road and has the largest population among the KCNs communities. The community hosts a privately operated Northern Store that is part of a larger Northern distribution network operated by the North West Company. The store receives regular

shipments of products including a large portion, but not all, of the food categories identified in the RNFB (2008a). Freight is also shipped to the community by Grey Goose Bus Lines (a subsidiary of Greyhound Canada), as part of the regular bus service and by other companies such as Arctic Beverages and Old Dutch. The presence of this competition helps encourage increased selection and stabilizes prices at a level approximately 17% higher than in Thompson.

The Mooseocoot Convenience Store and Gas Bar have recently opened in the community of Ilford (WLFN). As the most remote KCNs community, Ilford is accessible by ice road during the winter season, or by rail or chartered flight. Rail service costs about $50 per person to Thompson return. In addition, WLFN Members would also need taxi service to and from the airport (about $20 in total) adding about $70 to the bi-weekly grocery bill. Although travel by train allows passengers to bring large quantities of goods with them, making it the most affordable way of shopping for large volumes of groceries, it adds considerably to the cost of food for community Members.

The communities of Fox Lake (Bird) and York Landing (*Kawechiwasik*) both experience higher costs than Split Lake. Fox Lake (Bird) is located 250 km from the regional distribution centre of Thompson and is accessed from a highway that is often in relatively poor condition. In the summer, York Landing (*Kawechiwasik)* is only accessible by ferry and by air. In the winter, the community can be accessed by winter road via Split Lake. Findings from community-based research suggest that Members of YFFN often make use of the greater accessibility of Split Lake by purchasing grocery and other household items there or in Thompson during the summer and winter seasons. The communities of Fox Lake (Bird) and York Landing (*Kawechiwasik*) hosted stores that brought in goods for sale, but these stores both experienced disruptions in service during 2009.

The RNFB survey was conducted at the York Landing (*Kawechiwasik*) store before it closed in October 2009 and results showed that prices were about 28% higher than in Thompson and about 9% higher than in Split Lake. The York Landing (*Kawechiwasik*) store reopened within a few months, in late 2009, under Band management[1]. Nevertheless, Members of YFFN will likely continue to make purchases in Split Lake when seasonal conditions permit. As of April 2010, the store at Fox Lake (Bird) remained closed and FLCN Members living in the community traveled to Gillam to do their shopping. As a result, prices for residents of Fox Lake (Bird) are comparable to those in Gillam, at least for those who travel there for groceries, plus the cost of travel between the communities.

As Aboriginal people with hunting and fishing Treaty rights and with designated **resource management areas** (in the cases of TCN, YFFN and FLCN), most KCNs Members are likely to include at least some **country food** (fish and game, berries, nuts and edible wild plants) in their diet. All country food items are able to replace items on the RNFB. While the premiums outlined in this analysis will still hold generally for each individual product purchased, the total weekly amount paid by people living in remote

[1] It is unclear at the time of writing whether the new Band management of the store in York Landing (Kawechiwasik) will affect the cost and availability of grocery items. For the purposes of this comparison, we assume that the new management has no measureable effect on cost of living.

communities may be offset by the presence of country foods[1]. This trend is likely more pronounced where wildlife food sources are more accessible and the cost of store-bought food is highest.

3.3.4.1.2 Transportation

Transportation to and from KCNs communities is generally difficult and expensive. There are four main modes of transport available in the Local Study Area: air, bus, rail and road. None of the communities are accessible via all four modes of transport, with some communities only experiencing very limited opportunities for outside travel during certain times of the year. Table 3-13 summarizes the available transportation options for the KCNs communities.

Table 3-13: Summary of Transportation Access to Keeyask Cree Nations Communities

Methods	Split Lake	Ilford	Fox Lake (Bird)[1]	York Landing (*Kawechiwasik*)
Rail	No	Yes	Yes	No
Ferry	Yes (to YFFN)	No	No	Yes
Road/Bus	PR 280/Bus	No	PR 290	No
Airport[2]	No	Yes	No	Yes
Winter Road[3]	Yes	Yes	No	Yes

Source: YFFN KPI Program 2009-2010; FLCN KPI Program 2009-2011; Gillam KPI Program 2009-2010; CNP 2010c, 2010f.
Note:
1. FLCN Members living in Gillam have rail, road/bus and air access.
2. There are no scheduled flights to Ilford; however, charter service is available to both Gillam and Thompson.
3. Winter roads connect Split Lake to YFFN at York Landing (*Kawechiwasik*) and WLFN at Ilford.

Travel costs are also closely associated with the cost of food and household items in remote communities. The main cost of transportation for residents of the KCNs communities, particularly those without local stores, is the cost of regular commutes to Thompson or other neighbouring communities for groceries and other supplies not available closer to home.

3.3.4.1.3 Housing

Unlike food and transportation costs, housing costs tend to be very low across all four of the KCNs communities, with little variation among communities. Each KCNs community distributes housing to Members, usually at little or no cost except in the case of CMHC housing where residents may incur costs. In 2007, Manitobans spent on average 25% of their gross household income on shelter, 30% of which was spent on operating and furnishing their homes. Therefore, the ability for KCNs residents to reduce or eliminate these shelter-related costs provides a large benefit in terms of the housing component of their cost of living (with the exception of some living in CMHC housing).

[1] Costs associated with country foods – such as the price of fuel, fishing, hunting and trapping gear – are not considered in this analysis but could add material costs to country food.

3.3.4.2 Gillam

3.3.4.2.1 Food and Household Items

The cost of food and household items tends to be high in Gillam. Revised Northern Food Basket survey data show prices in Gillam to be about 12% higher than in Thompson (see Table 3-11). However, prices in Gillam are lower than those experienced in Split Lake, which is a larger community located closer to Thompson. As a regional centre, Gillam is likely able to keep prices lower than in Split Lake because of increased purchasing power.

3.3.4.2.2 Transportation

Compared to other Regional Study Area communities, Gillam is very accessible, with regular flights from Winnipeg, year-round highway access and regularly scheduled bus and rail service. As a smaller centre, flights to Gillam are generally more expensive than flights to Thompson and are available to fewer destinations than in Thompson. Road access is considered poor along PR 280, which connects Gillam to Split Lake and Thompson, with residents attributing some increased maintenance costs of their vehicles to the condition of this highway. Public transportation in Gillam consists of a local taxi. There is no municipal bus service. Table 3-14 summarizes the transportation options available for Gillam.

Table 3-14: Summary of Transportation Access to Gillam

Community[1]	Air	Bus	Rail	Road	Ferry	Winter Road
Gillam	Scheduled Flights	yes	yes	yes	n/a	n/a

Sources: Calm Air 2009; Greyhound Canada 2009; MIT 2009; Town of Gillam 2009; VIA Rail 2009.
Note:
1. 'n/a' denotes 'not applicable' (*e.g.*, winter roads are not applicable in the case of Fox Lake (Bird) because it is already serviced by an all weather road).

The cost of the regularly scheduled services to various destinations are discussed in more detail in Appendix 3B. Table 3-15 summarizes the number of flights from various communities each week to Gillam. Charter service to Ilford is also available.

Table 3-15: Weekly Flights to Gillam (2009)

	York Landing (*Kawechiwasik*)	Thompson	Churchill	Winnipeg
Calm Air	Charter only	5	6	11

Sources: Calm Air 2009.

3.3.4.2.3 Housing

Costs for housing tend to be low for Gillam residents who are employed by Manitoba Hydro because they are provided with subsidized housing as an incentive to work in this remote northern community. For other residents (including FLCN Members and non-Hydro employees), housing costs are much higher. There are approximately 534 housing units in Gillam, with the majority of these (322) owned by Manitoba Hydro and rented to permanent employees stationed in the town. The remaining units are owned by other organizations, owned privately, or by FLCN that provide them to Members residing in the community. As a result, there is virtually no supply of homes available to meet any changes in demand that may occur for housing in Gillam. This may change in the future with the recent introduction of an Alternative Gillam Housing program by Manitoba Hydro which provides options for Manitoba Hydro's employees based in Gillam to purchase their homes or rent alternative local accommodation.

Manitoba Hydro is expected to build new homes in Gillam in the near future to accommodate the workforce increases anticipated from increased hydroelectric operations along the Nelson River. These homes will be provided exclusively to Manitoba Hydro employees and will not be available on the open market for some time, if at all. There is one apartment block being built for the open market; however, no other housing developments are currently planned for Gillam. Implications of the recent establishment of FLCN's new reserve in Gillam, A Kwis Ki Mahka Reserve, have yet to be determined.

3.3.4.3 Thompson

3.3.4.3.1 Food and Household Items

As the Regional Study Area's largest community and main distribution hub, the cost of food and household items in Thompson tends to be the lowest of all the communities in the Local Study Area. The RNFB analysis indicates that Thompson residents pay a 9% premium for food and household items over Winnipeg. A portion of this increase is attributable to the long distance goods must travel from Winnipeg and other regional distribution points to reach consumers in Thompson. This factor, however, only accounts for some of the price increase.

Rapid development within the community, including previous investments in Vale's mining operations, increases in the number of companies conducting cold weather testing in Thompson and construction of new health care facilities, are among the many projects and trends taking place in Thompson that are increasing demand for labour from all job categories. This increase in labour demand has created a labour shortage, which, in turn, is causing wage inflation in Thompson. Wage inflation provides direct upward pressure on the price of food and household goods. This situation is likely to change given that it is anticipated that Vale's smelter and refinery will close down by 2015. Specifically, a stable or declining economy will not exert the same upwards pressure on the price of food and household goods.

3.3.4.3.2 Housing

Thompson has approximately 4,810 total occupied private dwelling units according to the 2006 census (this includes apartments, single detached, row houses and moveable units). Despite having the largest housing stock in the region, Thompson is currently experiencing a housing shortage.

House prices tend to be highly volatile in Thompson, being closely linked with the price of nickel and related operations at Vale's operations. In 2000, average house prices in Thompson reached a low of $83,762. They peaked in 2008 at a high of $243,391. Prices dropped slightly in 2009, with an average selling price of $204,212 at the end of September 2009. Overall, house prices have more than doubled since 1998 and, in September 2009, were on par with average house prices in Winnipeg.

This volatility tends to deter developers from speculating on new subdivisions. Between 2000 and 2006, 65 housing units were built. In 2007, 26 new units were built, with another 51 units built in 2008. No new units had yet been started as of March 2009. As long as current economic conditions prevail, demand is expected to outpace supply in Thompson (Thompson KPI Program 2008-2010). Additional discussion regarding housing is provided in Section 4.3.2.

While little investment is currently being made to build new housing units, larger private investments are being made to upgrade existing units, particularly to convert existing rental apartments into condominiums for sale. In 2007, the Grey Wolf apartments were converted to condominiums. Another 400 apartment units are currently scheduled for conversion from rental apartments to condominiums, including the Princeton Towers and the Corayana Apartments. Prices for the Princeton Towers units are expected to start at about $164,000 (Service Canada 2009b). The trend toward converting apartments into condominium units is increasing the average cost of housing per person without relieving the increase in housing demand resulting from the current economic activity in the region. This is currently compounding the upward pressure on housing prices (Thompson KPI Program 2008-2010). There is reason to expect that housing prices could stabilize since the announcement regarding the nickel refinery and smelter closure.

3.3.4.3.3 Transportation

Thompson is the most accessible community in the Local Study Area, with regular flights to and from Winnipeg, The Pas, Churchill and other communities. Thompson is also serviced by regularly scheduled passenger bus and rail service. Provincial Trunk Highway (PTH) 6 from Winnipeg to Thompson is built to a relatively higher standard and maintained better than PR 280. Table 3-16 summarizes the transportation options available to Thompson residents.

Table 3-16: Summary of Transportation Access to Thompson

Community[1]	Air	Bus	Rail	Road	Ferry	Winter Road
Thompson	Scheduled Flights	yes	yes	yes	n/a	n/a

Sources: Calm Air 2009; Perimeter Aviation 2010; Greyhound Canada, 2009; MIT 2009; City of Thompson 2009; VIA Rail 2009.
Note:
1. 'n/a' denotes 'not applicable' (*e.g.*, winter roads are not applicable in the case of Fox Lake (Bird) because it is already serviced by an all weather road).

The costs of the regularly scheduled services tend to be highly variable. The costs for each of these services to the various available destinations are discussed in more detail in Appendix 3B. Table 3-17

summarizes the number of flights from various communities each week to Thompson. Charter service to Ilford is also available.

Table 3-17: Weekly Flights to Thompson (2009)

	York Landing (*Kawechiwasik*)	Gillam	Churchill	Winnipeg
Calm Air	Charter only	5	5	35
Perimeter	10	Charter only	Charter only	51

Sources: Calm Air 2009; Perimeter Aviation, 2009.

3.3.5 Regional Study Area – Employment and Training Opportunities

Employment levels across the Regional Study Area remain low for Aboriginal people, both in the CBN region and more broadly across the Regional Study Area. The Aboriginal unemployment rate in the Regional Study Area was 27.3% in 2001. Exact unemployment data are not available for Aboriginal people living in the CBN region, although unemployment rates for Aboriginal people living in Census Divisions 22 and 23, which contain the CBN region, were 28.1% in 2001.

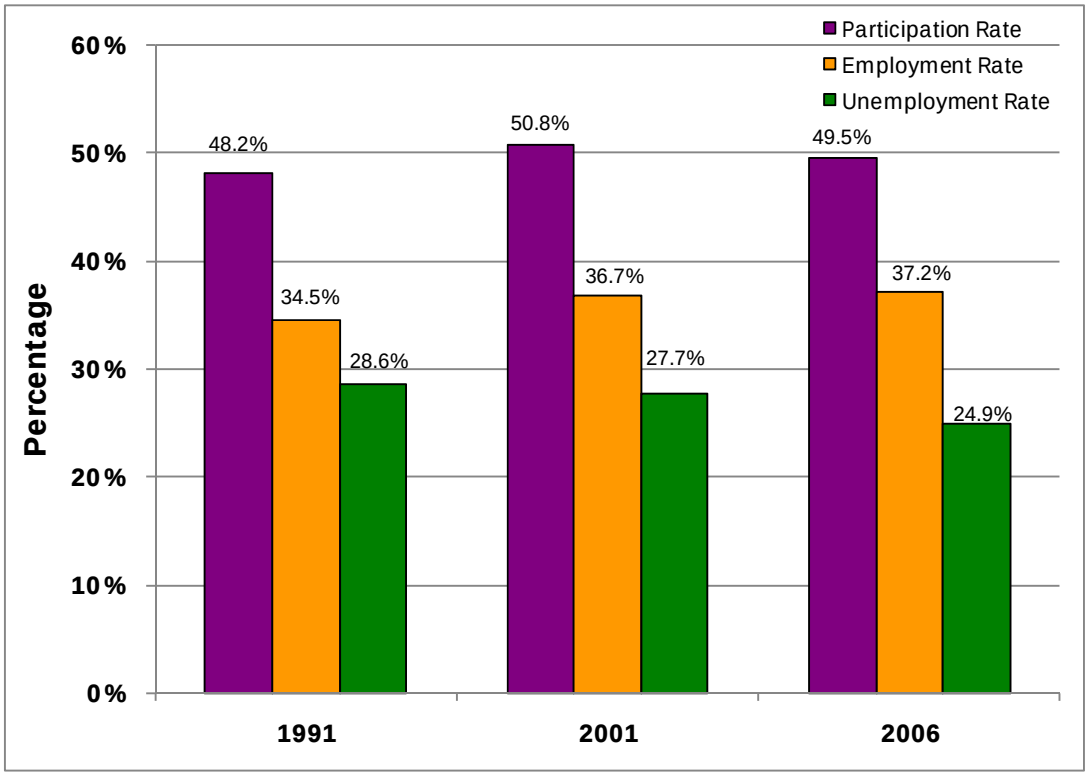
This section presents the employment, training and income data for Northern Aboriginal residents (denoted NA), derived from Statistics Canada 1991, 2001 and 2006 Census data (Statistics Canada 1992, 2002, 2007a).

All data have been rounded. For comparison, the data for northern Aboriginal residents are discussed in reference to the Regional Study Area residents, residents of Manitoba and residents of Canada as a whole. Northern Aboriginal residents are characterized as those residents of the Regional Study Area who self-identify as Aboriginal. The Regional Study Area is made up of Census Divisions 19, 21, 22 and 23 and data have been summed and weighted where necessary. The Regional Study Area, Manitoba and Canada labour force characteristics are based on 20% samples.

3.3.5.1.1 Labour Force

There has been a substantial increase in potential labour force, employment and unemployment among northern Aboriginal residents between 1991 and 2006. The potential labour force, defined as the population 15 years and older, increased by more than 44% from 26,785 in 1991 to 38,640 in 2006 (see Appendix 3A, Table 3A-16). Factors contributing to this increase include having a high proportion of the population in the young age groups, the residual effects of Bill C-51, passed in 1985, as well as a general trend toward greater self-identification by Aboriginal people over this period, during which the Aboriginal population of Canada grew by 45% (Statistics Canada 2008c). The total number of employed individuals increased by about 56%, while the total number of unemployed individuals in the labour force grew by about 29% over the same period.

Figure 3-14 illustrates the changes in the participation, employment and unemployment rates between 1991 and 2006 for northern Aboriginal residents (for a more detailed analysis, see Appendix 3A, Table 3A-16); while Figure 3-15 compares the 2001 rates with those for the Regional Study Area, Manitoba and Canada.



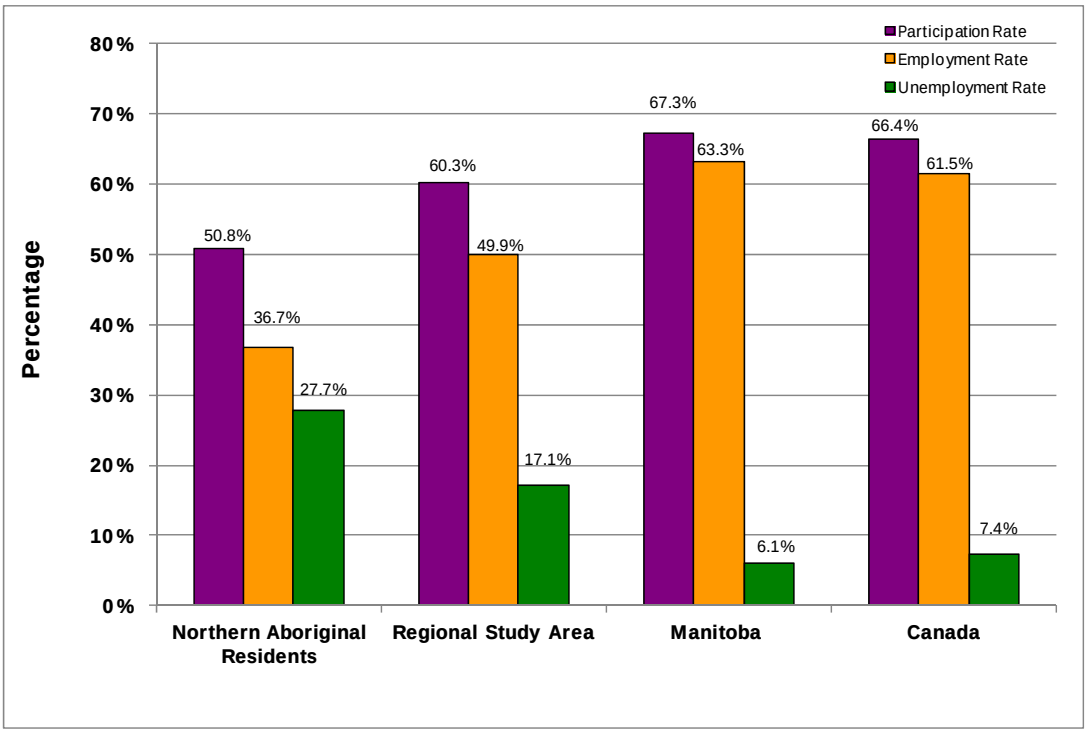
Source: Statistics Canada 2011a, 2011b.
Notes:

- Complete table provided in Appendix 3A (Table 3A-16).
- Northern Aboriginal residents defined as Aboriginal Identity Population in Statistics Canada Census Divisions 19, 21, 22 and 23.
- Participation rate refers to the labour force in the week (Sunday to Saturday) prior to Census Day (May 15, 2001), expressed as a percentage of the population 15 years of age and over.
- Employment rate refers to the number of persons employed in the week (Sunday to Saturday) prior to Census Day (May 15, 2001), expressed as a percentage of the total population 15 years of age and over.
- Unemployment rate refers to the unemployed persons, expressed as a percentage of the labour force in the week (Sunday to Saturday) prior to Census Day (May 15, 2001).

Figure 3-14: Change in Employment, Participation and Unemployment Rates among Northern Aboriginal Residents (1991, 2001, 2006)

Figure 3-14 shows, the participation rate grew slightly by 1.3 percentage points from 1991 to 2006. Over this same period, the employment rate increased nearly three percentage points. Despite an absolute increase in the number of unemployed, the unemployment rate decreased nearly four percentage points (Figure 3-14), indicative of faster growth in employment than labour force size. The net result was 5,000 more people were employed in 2006 than in 1991, while about 1,000 more people were unemployed (see Appendix 3A, Table 3A-16).

As shown in Figure 3-15, the participation rate among northern Aboriginal residents in 2001 was approximately 9-16 percentage points lower than that of the populations of the Regional Study Area, Manitoba and Canada (for a more detailed analysis, see Appendix 3A, Table 3A-17). In addition, the rate of employment among northern Aboriginal residents was about 13-27 percentage points below that of the comparison populations. Correspondingly, the unemployment rate among northern Aboriginal residents exceeded that of Regional Study Area residents by nearly 10 percentage points, Manitoba residents by nearly 22 percentage points and residents of Canada by about 20 percentage points.



Source: Statistics Canada 2011a.
Notes:

- Complete data set provided in Appendix 3A (Table 3A-17).
- Northern Aboriginal residents defined as Aboriginal Identity Population in Statistics Canada Census Divisions 19, 21, 22 and 23.
- Regional Study Area defined as Statistics Canada Census Divisions 19, 21, 22 and 23.
- Participation rate refers to the labour force in the week (Sunday to Saturday) prior to Census Day (May 15, 2001), expressed as a percentage of the population 15 years of age and over.
- Employment rate refers to the number of persons employed in the week (Sunday to Saturday) prior to Census Day (May 15, 2001), expressed as a percentage of the total population 15 years of age and over.
- Unemployment rate refers to the unemployed persons, expressed as a percentage of the labour force in the week (Sunday to Saturday) prior to Census Day (May 15, 2001).

Figure 3-15: Employment, Participation and Unemployment Rates among Northern Aboriginal Residents (and in Comparison Populations) (2001)

3.3.5.1.2 Education

Education is an important factor influencing the extent to which Project employment opportunities may be filled by the northern Aboriginal residents. Basic education levels for northern Aboriginal residents were determined using the 2001 Census of Canada. In 2001, the Census of Canada determined the highest level of education attained for individuals aged 20 years and over, but the data for northern Aboriginal residents represent those aged 25 years and over. As a result, any comparison of this data with data from other populations must be interpreted with caution. Data are presented in Table 3-18 (for a more detailed analysis, see Appendix 3A, Table 3A-18).

Table 3-18: Distribution of Highest Level of Education Attained by Northern Aboriginal Residents (2001)

Characteristics[1,2,3]	Northern Aboriginal Residents[4]	Comparison Populations	
		Regional Study Area[5]	Manitoba
Less than high school certificate	59.6%	48.2%	34.4%
High school certificate or equivalent	5.8%	8.5%	11.4%
Trades certificate or diploma	n/a	13.0%	11.7%
Some post-secondary education	10.4%	10.2%	11.4%
Post-secondary education certificate, diploma, degree, *etc.*[6, 7]	24.1%	20.2%	31.0%

Source: Statistics Canada 2002, 2011a.
Notes:
1. Complete data set provided in Appendix 3A (Table 3A-18).
2. Categories have been organized and rolled-up by InterGroup Consultants for ease of comparison.
3. Columns may not add to 100% due to rounding and/or unavailable data (n/a).
4. Northern Aboriginal residents defined as Aboriginal Identity Population in Statistics Canada Census Divisions 19, 21, 22 and 23.
5. Regional Study Area defined as Statistics Canada Census Divisions 19, 21, 22 and 23.
6. For columns "Thompson", "Regional Study Area" and "Manitoba", "Post-secondary education certificate, diploma, degree, *etc.*" is the sum of "Post-secondary non-university certificate or diploma", University certificate or diploma" and "University degree" in the corresponding table in Appendix 3A.
7. For column "Northern Aboriginal Residents", "Post-secondary education certificate, diploma, degree, *etc.*" is the sum of "Trades, college or university certificate or degree (below bachelor's level" and "University degree" in the corresponding table in Appendix 3A.

The total population of individuals 15 years and over reported for northern Aboriginal residents in 2001, exceeds the total population 25 years and over in the Educational Attainment table (Table 3-18) by nearly 10,000 individuals. This highlights the fact that the northern Aboriginal population is a relatively young group, with approximately 28% of the labour force-aged population between the ages of 15 and 25 years in 2001. The HNTEI and other initiatives are targeted toward the population for this reason.

About 40% of northern Aboriginal residents had a high school certificate, trades or other post-secondary education in 2001, which was about 11 percentage points less than Regional Study Area residents and about 25 percentage points less than Manitoba residents. However, a greater percentage of northern

Aboriginal residents had attained a post-secondary education certificate, diploma, or degree when compared to Regional Study Area residents in 2001, but less than Manitoba as a whole (Table 3-18).

Educational attainment below a high school certificate or equivalent is prevalent in northern Aboriginal communities for a number of reasons; most importantly, a historic lack of access to high school programs in local First Nations communities. In the past, residents of communities that did not offer higher-level secondary education would have to leave their home community for a larger centre in order to complete high school. In some cases, those who left the communities to pursue their education did not return, opting instead to pursue opportunities outside their home community upon completion of their diplomas, degrees or certificates.

In order to address lower educational attainment among northern Aboriginal residents, including the lack of basic skills and education, community-based training programs have been developed. Many of these programs include a life skills component and ongoing support. Still, findings from community-based research suggest that lack of access to academic prerequisites and certain essential courses (such as Grade 12 Physics and Mathematics) in the KCNs communities presents a major systemic challenge to recruitment for northern Aboriginal residents.

While the total rate of post-secondary education among northern Aboriginal residents is lower than those of the Regional Study Area and Manitoba, a slightly higher rate of high school graduates continue on to post-secondary studies than residents of the Regional Study Area or Manitoba. Among northern Aboriginal residents who graduated from high school, over 85% had pursued further education in 2001, compared to 83.6% of Regional Study Area residents and 82.7% of Manitoba residents.

Approximately four percent of the total population of northern Aboriginal residents held a university degree in 2001, compared to eight per cent of Regional Study Area residents and over 14% of residents of Manitoba (see Appendix 3A, Table 3A-18).

CHARACTERISTICS OF THE WORKFORCE

The distribution of occupations in a community is an important indicator of the type of training that individuals need to pursue available opportunities. The economic structure of the Regional Study Area has some unique attributes typical of a region with a rich resource base. Table 3-19 and Figure 3-16 present the distribution of occupations among northern Aboriginal residents in 2001 compared to the Regional Study Area, Manitoba and Canada as a whole (see Appendix 3A, Table 3A-19 for a more detailed breakdown of occupations).

The largest employer of northern Aboriginal residents are businesses in the sales and services sector. The percentage of northern Aboriginal residents employed in the sales and services sector is about seven percentage points greater than that of Regional Study Area residents and about nine percentage points greater than that of Manitoba residents.

The second largest employer of northern Aboriginal residents is businesses that provide trades, transport and equipment operation and related occupations. Compared to northern Aboriginal residents, these occupations include a lower percentage of Regional Study Area and Manitoba residents, by about 1.5 percentage points and three percentage points, respectively. The strength of this sector is related to the

relatively high rate of education in trades and other non-university certificates among northern Aboriginal residents, as well as the connections between the population and resource-based pursuits.

A large proportion of the northern Aboriginal workforce are employed in occupations related to social sciences, health, education, government services and religion. The percentage of the population employed in these sectors is greater for northern Aboriginal residents than residents of the Regional Study Area or Manitoba. This likely reflects the fact that many First Nations in the Regional Study Area are responsible for social services and education on-reserve; as well, many Aboriginal residents are employed in Band, provincial and federal administrative positions in northern communities.

Occupations related to management, business, finance and administration comprised the fourth largest percentage of northern Aboriginal resident employment. Compared to Regional Study Area and Manitoba residents, these occupations included a smaller percentage of the population of northern Aboriginal residents.

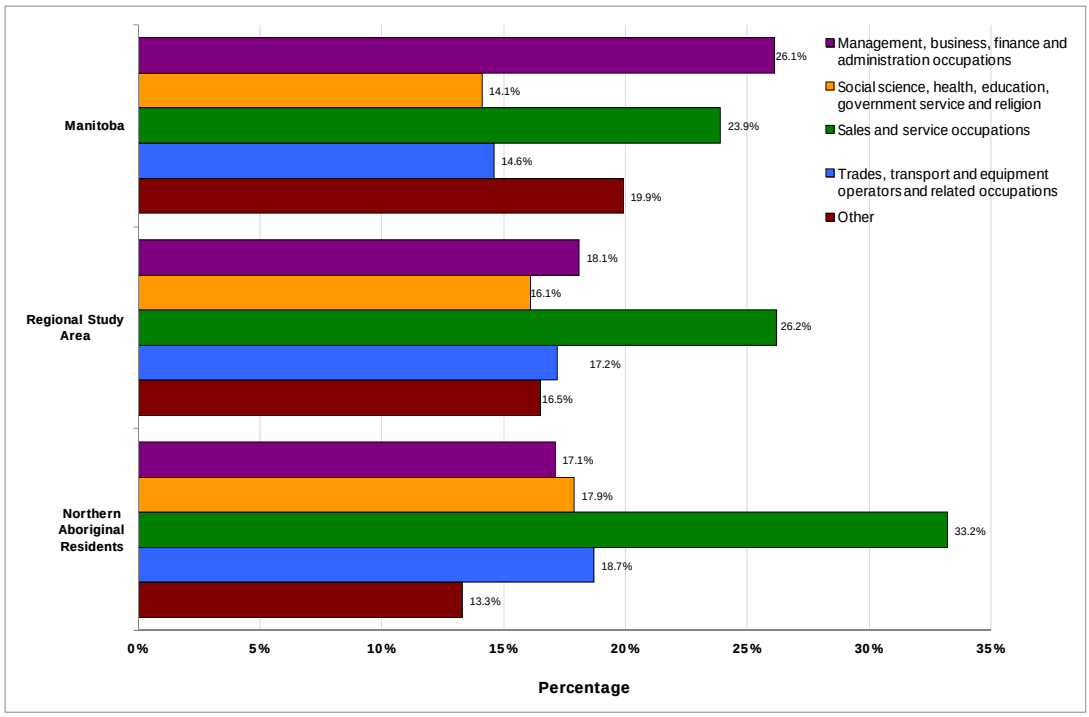
Table 3-19: Distribution of Occupation Classification among Northern Aboriginal Residents (2001)

Characteristics[1,2]	Northern Aboriginal Residents[3]	Comparison Populations	
		Regional Study Area[4]	Manitoba
Not applicable[5]	n/a	5.8%	1.4%
All occupations[6]	n/a	94.1%	98.6%
Management, business, finance and administration[7]	17.1%	18.1%	26.1%
Sales and service	33.2%	26.2%	23.9%
Social science, health, education, government service and religion[8]	17.9%	16.1%	14.1%
Trades, transport and equipment operators and related	18.7%	17.2%	14.6%
Other	13.3%	16.5%	19.9%

Source: Statistics Canada 2002, 2011a.

Notes:

1. Complete table provided in Appendix 3A (Table 3A-19).
2. Categories have been organized and rolled-up by InterGroup Consultants for ease of comparison.
3. Northern Aboriginal residents defined as Aboriginal Identity Population in Statistics Canada Census Divisions 19, 21, 22 and 23.
4. Regional Study Area defined as Statistics Canada Census Divisions 19, 21, 22 and 23.
5. Not available for Northern Aboriginal Resident population.
6. Not available for Northern Aboriginal Resident population.
7. Row "Management, business, finance and administration occupations" is sum of rows "Management occupations" and "Business, finance and administration occupations" in the corresponding table in Appendix 3A.
8. Row "Social science, health, education, government service and religion" is sum of rows "Health occupations" and "Occupations in social science, education, government service and religion" in the corresponding table in Appendix 3A.



Source: Statistics Canada 2002, 2011a.
Notes:

- Complete table provided in Appendix 3A (Table 3A-19).
- Categories have been organized and rolled-up by InterGroup Consultants for ease of comparison.
- Northern Aboriginal residents defined as Aboriginal Identity Population in Statistics Canada Census Divisions 19, 21, 22 and 23.
- Regional Study Area defined as Statistics Canada Census Divisions 19, 21, 22 and 23.
- Not available for Northern Aboriginal Resident population.
- Not available for Northern Aboriginal Resident population.
- "Management, business, finance and administration occupations" is sum of "Management occupations" and "Business, finance and administration occupations" in the corresponding table in Appendix 3A.
- "Social science, health, education, government service and religion" is sum of "Health occupations" and "Occupations in social science, education, government service and religion" in the corresponding table in Appendix 3A.

Figure 3-16: Distribution of Occupation Classification among Northern Aboriginal Residents (2001)

3.3.5.1.3 Project Employment

Between 2001 and the end of 2008, more than 500 northern Aboriginal residents completed courses and programs in construction trades and related occupations, providing a pool of people who might be interested in and at least partially qualified for Keeyask construction opportunities. Until the HNTEI program ended on March 31, 2010, northern Aboriginal residents not belonging to a KCNs community could participate in training through Manitoba Keewatinowi Okimakanak and the Manitoba Metis Federation.

Information and insights gained from the HNTEI were instrumental in developing and refining the employment effects estimation model analysis for this section. From 2001 onward, actual HNTEI data are used to account for all new northern Aboriginal entrants to Project-related trades in the Regional Study Area.

As indicated in the methodology description, the skills inventory for Regional Study Area Aboriginal people was developed using 2001 Statistics Canada data. Therefore, 2001 northern Aboriginal data were scaled to

reflect the proportion of this population comprised of CBN region residents (33%). The model was then used to forecast the estimated projected levels of potentially qualified workers in KCNs communities at the Project start[1]. Since HNTEI training primarily took place within the CBN region, HNTEI trainees are considered northern Aboriginal residents and therefore eligible for first-order hiring preferences on opportunities for TCs[2]. Table 3-20 provides a summary of the results of this modelling by broad Project job categories (for a more detailed analysis, see Appendix 3A, Table 3A-20).

Table 3-20: Employment Model - Northern Aboriginal and Churchill Burntwood Nelson Region Skills by Job Category (2014, 2021)

Skills By Job Category[1]	2014			2021		
	NA HNTEI[2,3]	CBN[4]	NA	NA HNTEII	CBN	NA
Designated Trades (Construction, Transportation and industrial)	101	315	740	101	335	805
Non-Designated Trades (Construction, Transportation and Industrial)	345	550	970	345	565	1,005
Construction Support and Service Trades	149	680	1,675	149	770	1,950
Total	595	1,545	3,385	595	1,670	3,760

Source: Derived from Wuskwatim Keeyask Training Consortium 2009/10 fourth quarter report and other WKTC derived data. Analysis prepared by InterGroup Consultants Inc., 2010.
Notes:
1. Complete data set provided in Appendix 3A (Table 3A-20).
2. 'NA' denotes Northern Aboriginal.
3. 'HNTEI' denotes pre-Project training.
4. 'CBN' denotes Churchill Burntwood Nelson region.
5. Numbers are subject to rounding.

This analysis shows a large portion of the CBN and northern Aboriginal workforce expected to be available for the construction start in 2014 will have received some pre-project training through HNTEI. Since most pre-project training took place within the CBN region, the majority of pre-project trainees will be eligible for CBN hiring preferences. A small number, however, may not fit the criteria set out in Section 13 of the BNA to be eligible for CBN hiring preferences.

There are expected to be 1,545 northern Aboriginal residents in 2014 with skills appropriate to work on the Project. Of these, at least 595 will have received pre-project training through HNTEI. This workforce is expected to grow to 3,760 workers by the end of the construction period in 2021.

[1] While the total CBN workforce is modelled, more certainty can be attributed to the HNTEI data, which represents actual data collected while the HNTEI program was in operation.

[2] There are two requirements to be eligible for first-order hiring preferences: Aboriginal status and residence in the CBN region. There is an exception for KCNs Members. All KCNs Members are eligible for first preference regardless of where they reside in Manitoba.

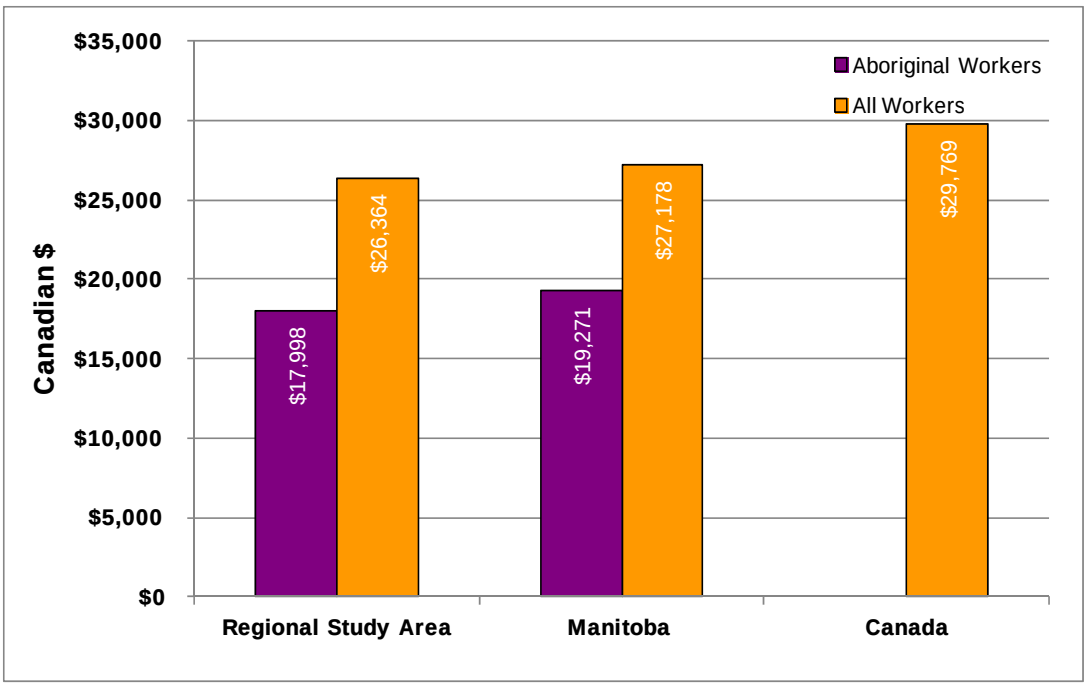
Carpenters account for more than half of anticipated CBN and northern Aboriginal workers in designated trades. Non-designated trades are more evenly distributed among trade categories, with three categories comprising the bulk of the anticipated labour: heavy equipment operators, teamsters and labourers. Almost half of all construction support workers for both CBN and northern Aboriginal groups are anticipated to be in the catering and janitorial category (Appendix 3A, Table 3A-20).

3.3.6 Regional Study Area – Business Opportunities

Project effects are primarily expected in the KCNs communities based on the terms negotiated through the JKDA. Some effects will also be felt in the communities of Gillam and Thompson due to their proximity to the Project area. However, broader implications for northern Aboriginal residents and residents of the Regional Study Area as a whole are not expected in terms of business opportunities.

3.3.7 Regional Study Area – Income

As noted in Figure 3-17, the average income in the Regional Study Area is lower than the provincial and national averages for both the Aboriginal population and the total population of the Regional Study Area.

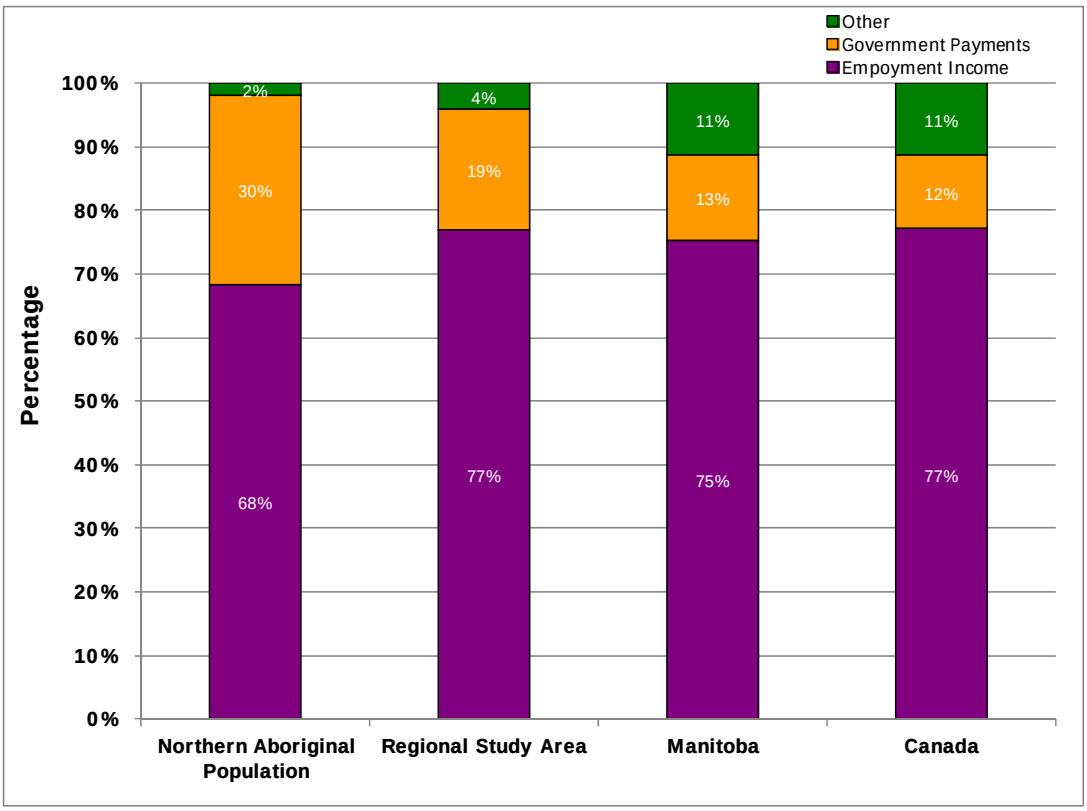


Source: Statistics Canada 2002.
Notes:

- Complete data set provided in Appendix 3A (Table 3A-21).
- The Aboriginal portion of Regional Study Area is the same as Northern Aboriginal residents. Northern Aboriginal residents defined as Aboriginal Identity Population in Statistics Canada Census Divisions 19, 21, 22 and 23.
- Regional Study Area defined as Statistics Canada Census Divisions 19, 21, 22 and 23.
- For Aboriginal Identity Population, Statistics Canada describes the Aboriginal Identity Population as referring to "those persons who reported identifying with at least one Aboriginal group, that is, North American Indian, Metis or Inuit and/or those who reported being a Treaty Indian or a Registered Indian, as defined by the Indian Act of Canada and/or those who reported they were Members of an Indian band or First Nation" (Statistics Canada 2003).
- Total Population 15 years and over with earnings.
- Percentage of Earnings calculated by InterGroup Consultants comparing Aboriginal Identity Population average earnings to Total Population average earnings, if total population average earnings are considered to be 100%.
- Data not available for average employment earning for total Aboriginal population of Canada.

Figure 3-17: Average Employment Earnings for Aboriginal Populations and Total Populations of Regional Study Area, Manitoba and Canada (2001)

As illustrated in Figure 3-18, in 2001, Northern Aboriginal residents relied on government payments at 2.5 times the national rate and Regional Study Area residents relied on government payments at just under twice the national rate.



Source: Statistics Canada 2002, 2007a.
Notes:
- Complete data set provided in Appendix 3A (Table 3A-22).
- Northern Aboriginal residents defined as Aboriginal Identity Population in Statistics Canada Census Divisions 19, 21, 22 and 23.
- Regional Study Area defined as Statistics Canada Census Divisions 19, 21, 22 and 23.

Figure 3-18: Sources of Income for Northern Aboriginal, Regional Study Area, Manitoba and Canada (2001)

3.4 ENVIRONMENTAL EFFECTS ASSESSMENT

The Keeyask Generation Project will create employment, business activity and income. As a result of enhancement measures favouring the KCNs, the most pronounced economic effects of the Project will be on Local Study Area communities. These effects will be generated through Project employment, business participation and the KCNs potential participation as equity partners. The Regional Study Area will also benefit mainly through Project employment. This is especially important for northern Manitoba Aboriginal people, whose unemployment levels are considerably higher than Manitoba as a whole. As well, the Project is of sufficient size that it can positively and noticeably affect the Manitoba and Canadian economies through the purchase of materials and equipment, labour supply, payments to the Provincial and Federal governments (*e.g.,* payroll tax, personal income tax, fuel tax and provincial sales tax) and re-spending of employment wages and other Project-related income. In anticipation of these benefits, Manitoba Hydro, along with the Province of Manitoba and Human Resources and Social Development Canada, invested substantial resources primarily in community-based training programs in the Regional Study Area. The training programs aimed to maximize local Aboriginal participation in the employment opportunities available from northern hydroelectric

development. The HNTEI initiative operated between 2002 and 2010. These resources were targeted towards northern Aboriginal people, including those from the following groups: Members of the KCNs in the immediate vicinity of the Project, Members of Nisichawayasihk Cree Nation near the Wuskwatim Generation Project, other First Nation Members served by Manitoba Keewatinowi Okimakinak and Metis people served by the Manitoba Metis Federation.

As noted in Section 1, each of the KCNs negotiated, agreed upon and ratified a JKDA with Manitoba Hydro to govern development of the Project. The JKDA included a number of provisions that affect the economic benefits the KCNs may receive if the Project proceeds:

- Participation as limited partners in the Project; the opportunity to invest in the Project and to receive future returns from that investment;
- Assignment of contracts for a portion of the construction of the Project for possible direct negotiation with Aboriginal-owned companies in the KCNs communities;
- Construction phase employment benefits as set out in the BNA and associated letters; and
- Operation phase employment opportunities throughout the Manitoba Hydro system.

In addition to the Local Study Area, two other areas are relevant to the examination of employment effects of the Project. They are as follows:

- The CBN area includes all communities located within the CBN river system area. These are the communities located on the waterways that were affected by the Churchill River Diversion, which was completed in 1977 (see Section 1, Map 1-2). Qualified Aboriginal residents of these communities will be included in a first hiring preference as outlined in the BNA. The KCNs communities are located within this area and make up approximately 23% of its Aboriginal population. KCNs workers share first order hiring preference on TCs with other workers from this area[1]. On DNCs, qualified Members of the KCNs can be hired directly, bypassing the hierarchy of preferences.
- The Regional Study Area includes all of northern Manitoba as defined in the BNA (see Figure 3-1). In the BNA, qualified Aboriginal residents of the Regional Study Area would be given third hiring preference after qualified Aboriginal residents from CBN communities and members of construction unions living in the Regional Study Area. On DNCs, qualified Aboriginal residents of the Regional Study Area could be hired directly after the pool of qualified and interested KCNs Members has been fully utilized, bypassing the job order hiring system used on TCs.

This section examines potential effects of the Project on the economy of the Local Study Area and the Regional Study Area during the construction and operation phases of the Project including:

- Economic benefits for the KCNs communities in the Local Study Area through construction employment, labour income and business opportunities;
- Potential for changes in cost of living in the Local Study Area;

[1] A small difference for KCNs Members (as compared to other workers) is that they can live anywhere in the province in order to receive preferential hiring.

- The extent to which construction employment and income may also accrue to Aboriginal people in the Regional Study Area as a whole;
- Operation employment benefits and labour income in the Local Study Area and Regional Study Area; and
- Potential revenue for each of the KCNs based on their investment in the Project.

Finally, the section looks at potential effects on the local resource economy as a result of physical and biophysical effects of the Project on the resources used by people in the Local Study Area for commercial or domestic purposes.

Socio-economic pathways of effect on the Economy VECs in the Local and Regional Study Areas include the following (see SE SV Sections 3.4.1 and 3.4.2 for details):

- Construction employment opportunities for qualified Aboriginal workers;
- Construction business opportunities through DNCs for KCNs businesses;
- Operation phase employment opportunities associated with the Project;
- Operation employment opportunities throughout Manitoba Hydro's system associated with JKDA commitments and targets for KCNs Members;
- Equity income for KCNs from their investment as limited partners in the Project (operation phase); and
- Project-related changes to terrestrial and aquatic species used by people for domestic or commercial purposes (construction and operation).

3.4.1 Construction Effects and Mitigation

3.4.1.1 Overview of Key Project Features

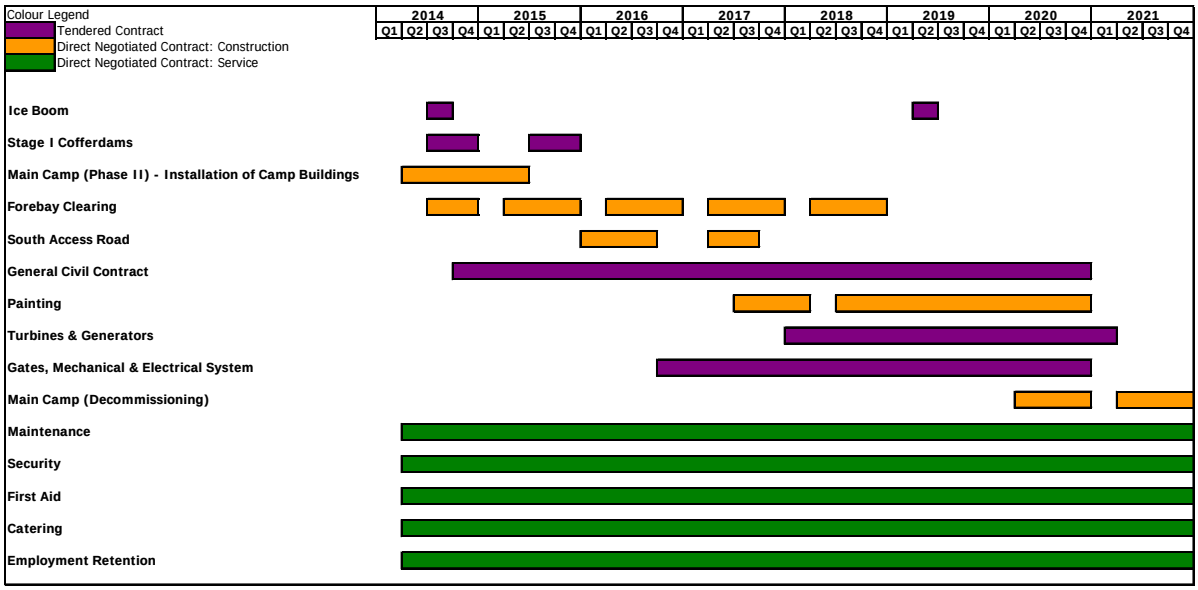
The construction phase of the Project is expected to last over eight years. The first year (2014) would be spent preparing for the general civil contract. General civil contract construction would begin late that summer, with the pouring of concrete for the main structures beginning two years after that. The Nelson River would be closed during the fall of 2017, with initial power occurring at the end of 2019 and final unit online at the end of 2020.

Figure 3-19 outlines the projected timing of the construction work packages. The Ice Boom, Stage I Cofferdam and Phase II Camp Building contracts are projected to commence in 2014. The largest contract, the General Civil Contract (GCC), is projected to begin in 2014. Construction related to gates, mechanical and electrical systems would begin in late 2016; construction related to turbines and generators would begin in early 2018.

For discussion purposes, where appropriate, DNCs are divided into two types - construction versus service contracts. This terminology reflects the JKDA. These will occur throughout the Project schedule. Construction DNCs include main camp construction (to begin in 2014); reservoir clearing and south access

road construction (to begin in 2014); painting (to begin in 2017) and main camp decommissioning (to begin in 2020)[1]. Service DNCs include maintenance, security, first aid, catering and employment retention, and would be in effect throughout the duration of the Project, although employment associated with these contracts would vary according to other Project activities occurring at the same time.

Keeyask Cree Nations Members located anywhere in the Province of Manitoba, Aboriginal residents of the CBN area and Aboriginal residents of the Regional Study Area were targeted for preferential treatment, with the aim of increasing participation by Aboriginal people in Project employment. Special measures and programs toward this end were outlined in the BNA and JKDA (further details are provided in Section 3.4.1.3). These measures are consistent with best practices for achieving local and regional Aboriginal participation in construction employment (InterGroup Consultants 2008). Similar measures were also applied for construction of the Wuskwatim Generation Project between 2006 and 2012.



Source: Derived from data provided by Manitoba Hydro in 2010.
Notes:

- This work would be carried out through construction work packages comprised of DNCs and TCs.
- Construction of the Keeyask Generation Project is estimated to commence June 2014.
- The workforce estimates were provided by Manitoba Hydro on August 31, 2010.
- Tendered Contracts include Ice Boom, Stage I Cofferdams, Turbines, Generators and Gate, Mechanical and Electrical System.
- Direct Negotiated Contracts include Main Camp Buildings, Reservoir Clearing, South Access Road, Painting and Main Camp Decommissioning and the five Service Contracts (Maintenance, Security, First Aid, Catering and Employment Retention).
- Actual timing of work packages could be different from those presented here.

Figure 3-19: Schedule of Construction Phase Work Packages for the Keeyask Generation Project

[1] Actual timing of work packages could be different than those presented here.

3.4.1.2 Construction Employment Opportunities

Employment opportunities represent direct and indirect benefits associated with construction projects, particularly in the vicinity of communities where unemployment is typically high. The intent of this discussion is to characterize potential employment outcomes within the context of training opportunities in the north (for example, the HNTEI). Key considerations include the type of positions available (including required skills and experience) and their duration.

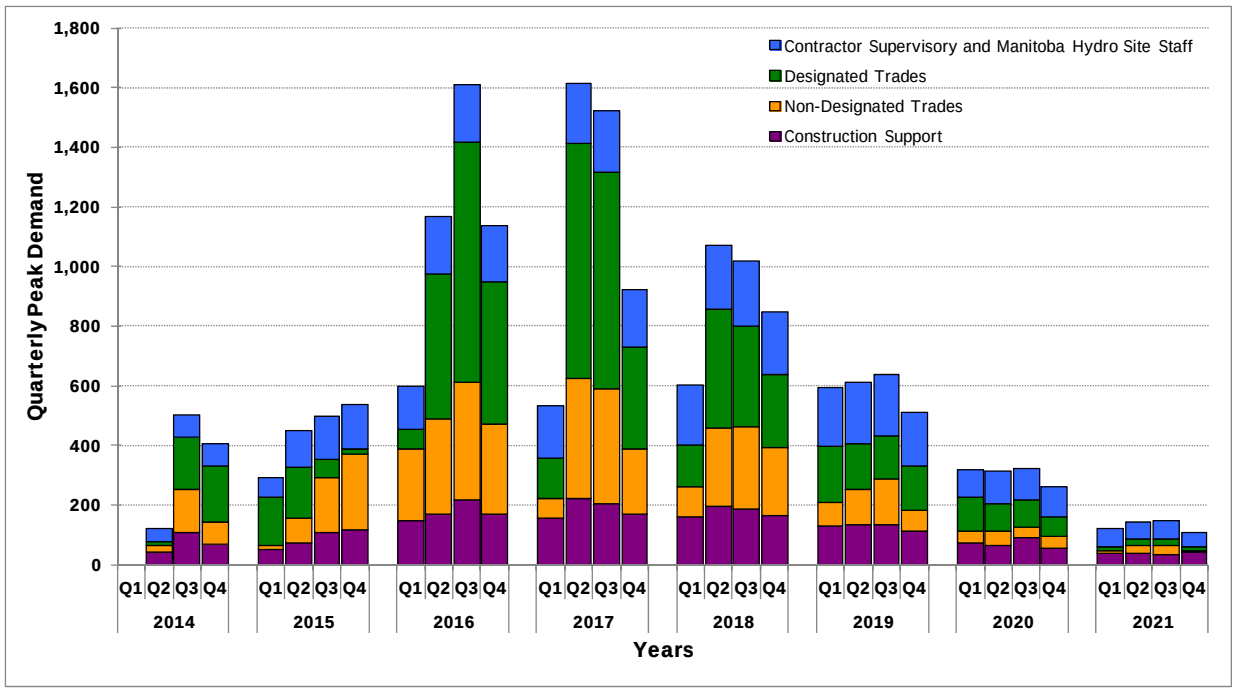
Construction employment opportunities are characterized by estimates of workforce requirements. This section illustrates the estimated workforce requirements overall, as well as by DNCs and TCs. Results are provided on an annual basis and by job category for DNCs and TCs.

Information about workforce requirements is presented in this section as follows:

- Peak quarterly employment, indicative of the number of jobs that would be filled in a given quarter (Figure 3-20); and
- Person-years, indicative of the volume of employment that would be available (Figure 3-21)[1].

Figure 3-20 illustrates quarterly peak workforce requirements during the Project's construction phase divided into four broad occupational categories: construction support including catering, security and administrative staff; non-designated trades including labourers, truck drivers and heavy equipment operators; designated trades consisting of occupations having formal apprenticeship programs including carpenters, electricians, and ironworkers; and contractor supervisory and Manitoba Hydro staff. The workforce estimates presented here are useful primarily as an indication of the size and composition of Project-related employment opportunities. Actual workforce requirements would vary from the estimate presented in the following sections. All employment estimates in this section, including all graphic representations of workforce demand, are based on current labour regulations, Project plans as of spring 2012 and past experience with similar projects. Contractors retained to undertake each contract would develop their own approach to the assignment, which could affect the timing, level and skill mix of workers required to complete the work.

[1] A person-year is a measure of the amount of work that could be available during a specific time period or for a specific type of work. One person-year approximates the amount of work that one worker could complete during twelve months of full-time employment. This would equate to between 2,090 and 2,295 hours per year (rounded, based on regular weekly hours of 40-44 hours/week).



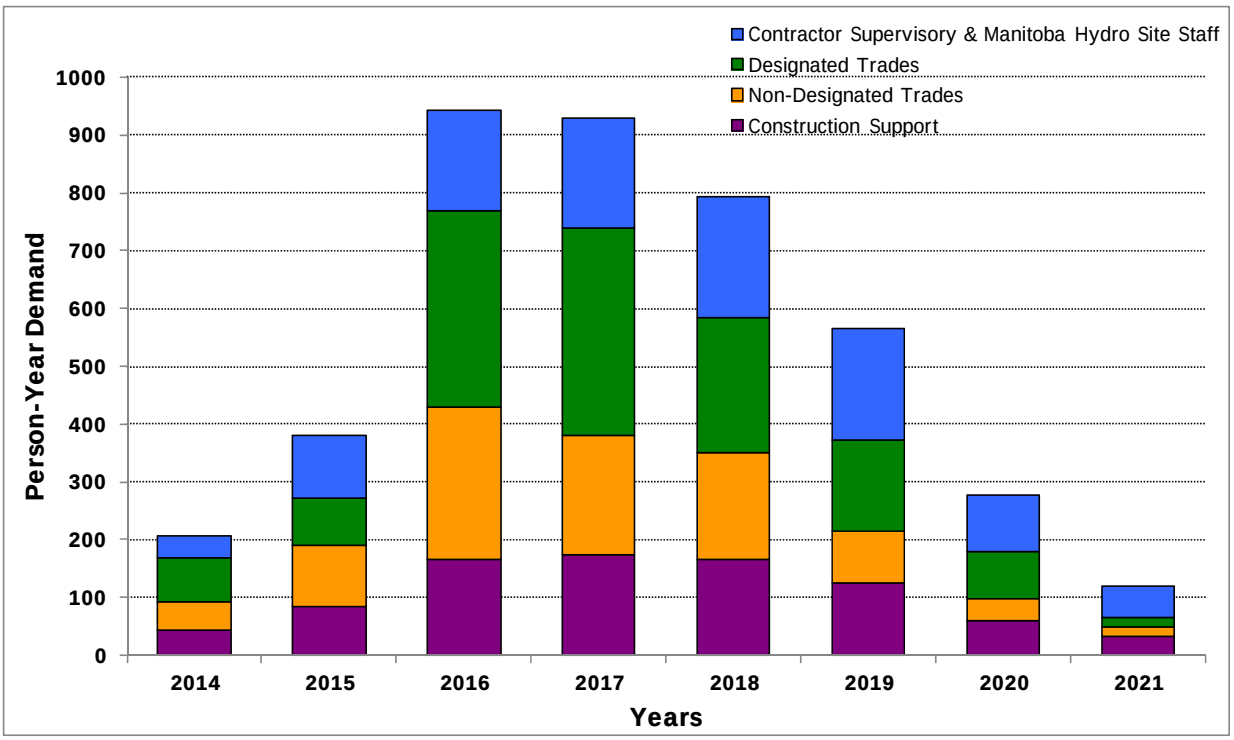
Source: Derived from data provided by Manitoba Hydro in 2010.

Figure 3-20: Construction Phase Estimated Workforce Requirements (Quarterly Peak) for the Keeyask Generation Project

Highlights of Figure 3-20 are as follows:

- Peak quarterly workforce requirements are highest during the Project's middle years, from 2016 to 2018, reaching the highest level in 2016 and 2017;
- The highest quarterly employment is set to occur in Q3 of 2016 and Q2 of 2017 at 1,610 workers; and
- Employment is seasonal. On average, the peak summer workforce during Q2 and Q3 increases in size compared to the previous winter.

Figure 3-21 illustrates construction workforce requirements by year (in person-years of employment).



Source: Derived from data provided by Manitoba Hydro in 2010.

Figure 3-21: Construction Phase Estimated Workforce Requirements (Person-Years) for the Keeyask Generation Project

The person-year employment pattern parallels the quarterly peak employment pattern with more moderate fluctuations.

Table 3-21 illustrates person-year construction workforce requirements by job category. Characteristics of person-year employment are as follows:

- Overall, the Project is expected to generate 4,218 person-years of construction employment;
- Construction support, non-designated trades and designated trades are expected to account for 3,150 person-years, with another 1,068 person-years generated by Manitoba Hydro and key contractor personnel; and
- Higher-skilled occupations (designated trades, contractor supervisory and Manitoba Hydro staff) account for 57% of total employment. Relatively lower skilled occupations (construction support and non-designated trades) make up the remaining 43%.

Table 3-21: Construction Workforce Requirements by Job Category

Job Category	Person-Years	Percent of Total
Construction Support	1,346	32%
Non-Designated Trades	952	23%
Designated Trades	852	20%
Manitoba Hydro and Contractor Supervisory	1,068	25%
TOTAL	**4,218**	**100%**

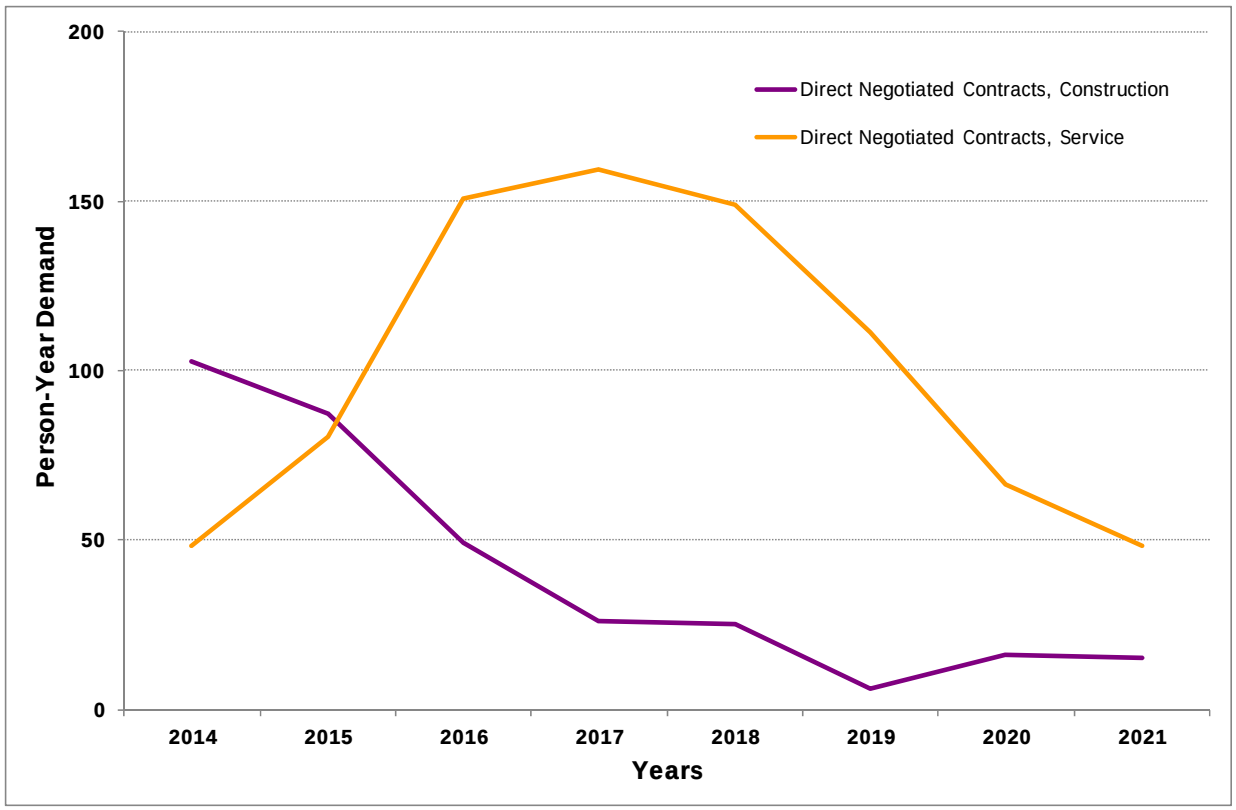
Source: Derived from data provided by Manitoba Hydro in 2010

DNCs are estimated to account for 1,142 person-years (36%) of contract employment, which does not include Manitoba Hydro or contractor supervisory employment. Most of these DNCs would begin in 2014, the first year of the Project and continue until the end of construction.

Figure 3-22 and Figure 3-23 focus solely on DNCs, which can be classified as follows:

- Construction DNCs (main camp; Phase II only): site preparation and development, main camp decommissioning, south access road construction, reservoir clearing, painting and architectural finish; or
- Service DNCs: catering, camp maintenance services, security services, employee retention and support services, and first-aid services.

Figure 3-22 illustrates workforce requirements for DNCs, broken down by construction and service contracts.

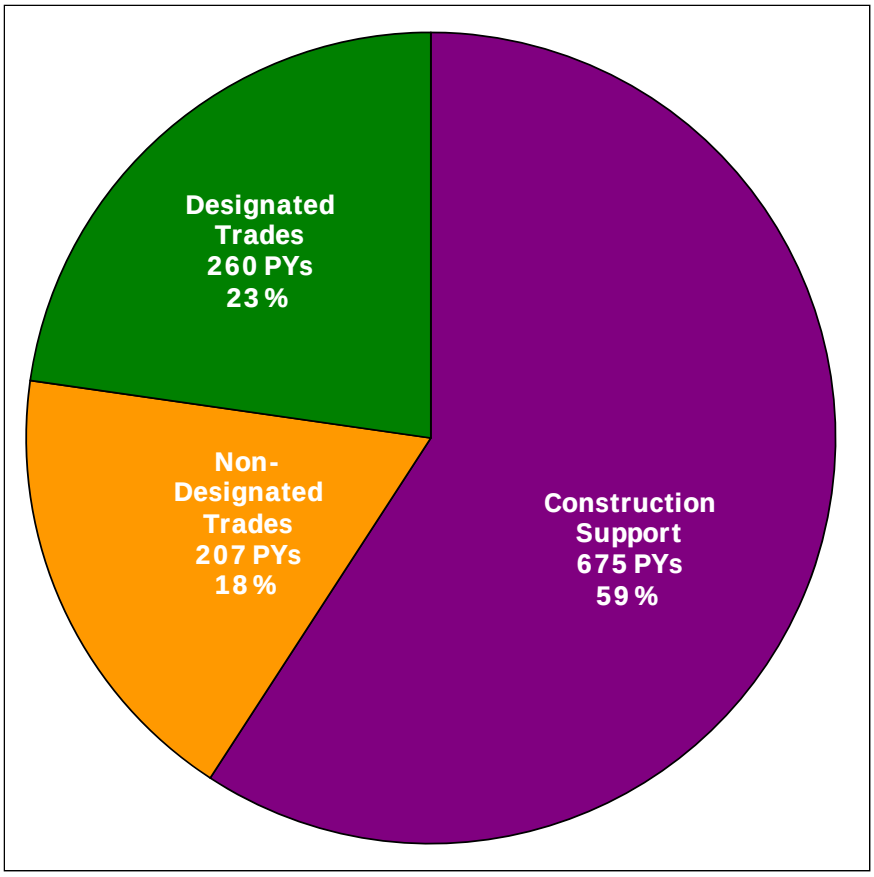


Source: Derived from data provided by Manitoba Hydro in 2010.

Figure 3-22: Construction Phase Estimated Workforce Requirements by Direct Negotiated Contract for the Keeyask Generation Project

Construction DNCs would account for 328 person-years of employment and would peak in 2014 at 103 person-years. DNC construction employment would then decline each year until 2019, when it would rise back to 15 person-years as part of the Project's demobilization activities. Service DNCs would account for 814 person-years of employment and would be active throughout the full duration of the Project. Employment related to DNC service contracts would follow a bell-shaped curve over the course of the Project, closely correlated with overall Project employment levels. Service contract DNCs would peak at 159 person-years of employment in 2017, with employment levels declining to 48 person-years by the end of the Project.

Figure 3-23 provides a summary of anticipated workforce requirements (by person-years) for the DNCs (construction and service contracts combined) by job category.

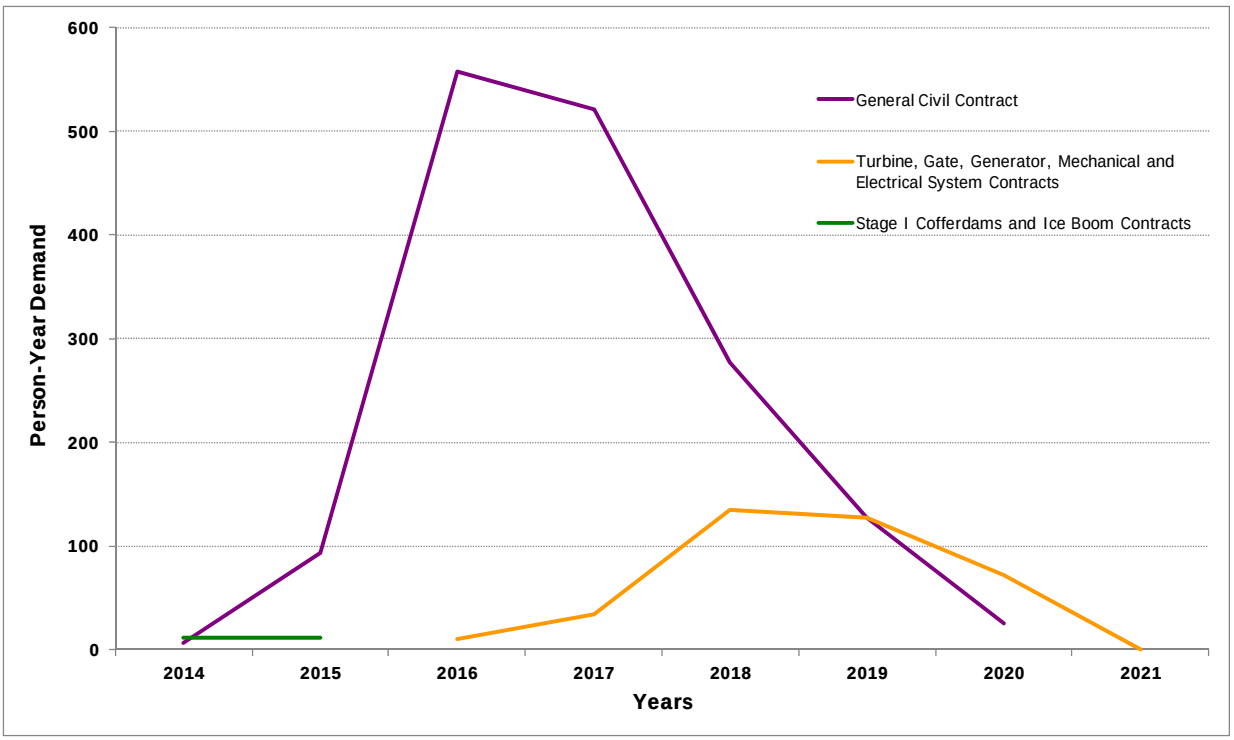


Source: Derived from data provided by Manitoba Hydro in 2010.

Figure 3-23: Construction Phase Estimated Direct Negotiated Contract Workforce Requirements by Job Category (Person-Years) for the Keeyask Generation Project

Construction support positions would account for the majority of the 1,142 person-years of available DNC employment. Designated trades would account for the next largest proportion, followed closely by the non-designated trades.

Tendered Contract workforce requirements would account for the majority of employment opportunities provided by the Project; Figure 3-24 and Figure 3-25 focus on these TCs. Figure 3-24 illustrates projected yearly person-year workforce requirements for the three categories of TCs: general civil contract; turbine-generator, mechanical-electrical and gate components, and Stage I cofferdam and ice boom construction.



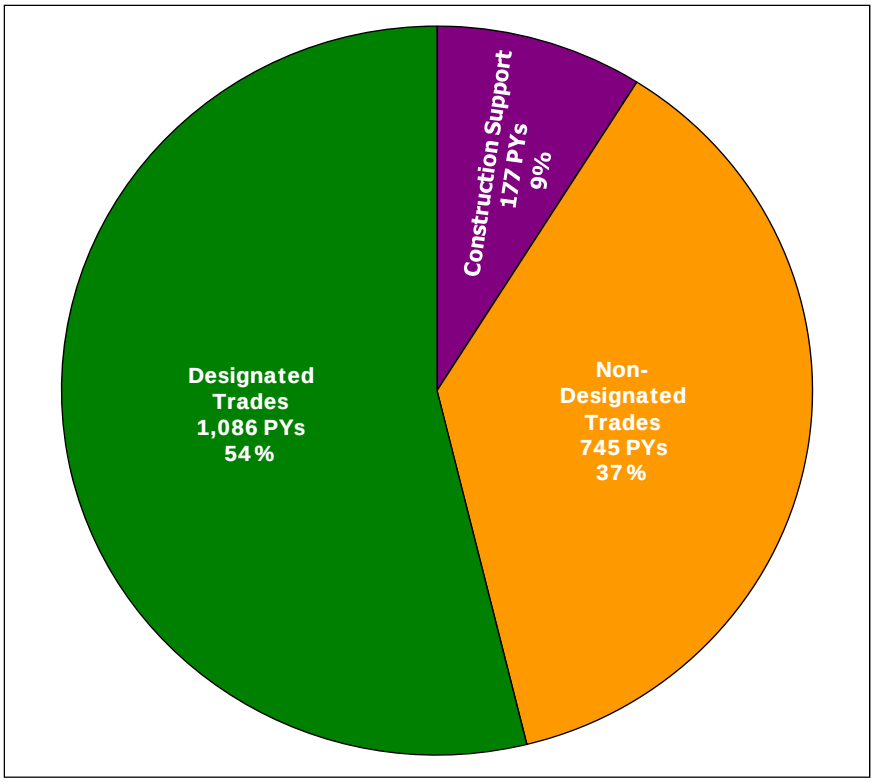
Source: Derived from data provided by Manitoba Hydro in 2010.

Figure 3-24: Construction Phase Estimated Tendered Contracts Workforce Requirements for the Keeyask Generation Project

The TCs would require 2,008 person-years (64%) of contract employment to complete:

- General Civil Contract employment would account for 1,607 person-years. General Civil Contract employment would begin in 2014 and last until 2020. General Civil Contract employment would peak in 2016 at 558 person-years and decline each year after, with 25 person-years of General Civil Contract employment expected in 2020. More than 92% of the person-years of General Civil Contract work would take place between 2016 and 2019, with 67% taking place in 2016 and 2017 alone.
- Most of the remainder (379 person-years) is accounted for by construction of the turbine-generator, mechanical-electrical and gate components of the Project, which would occur during the latter half of the schedule. These contracts would begin in 2016 and peak in 2018 at 135 person-years. Employment related to these contracts would occur through to the end of the Project as each of the final turbines becomes commissioned.
- Work related to Stage I cofferdam and ice boom contracts would create a total of 22 person-years of employment during the first two years of the Project.

Figure 3-25 provides a summary of estimated TC workforce requirements by job category (designated trades, non-designated trades and support positions).



Source: Derived from data provided by Manitoba Hydro in 2010.

Figure 3-25: Construction Phase Estimated Tendered Contract Workforce Requirements by Job Category (Person-Years) for the Keeyask Generation Project

Highlights of Figure 3-25 are as follows:

- Construction support positions would account for a relatively small proportion of the 2,008 person-years of contract TC employment, with designated trades accounting for over half of the person-years and non-designated trades at 37%.
- Compared to the distribution of DNC workforce requirements by job category, TC workforce requirements would show much higher demand for designated trades than for non-designated trades or construction support positions.

3.4.1.2.1 Factors Influencing Distribution of Construction Employment

An employment model was developed to estimate the portion of Project employment opportunities, as described above, that would be taken up by KCNs Members and by Aboriginal workers residing in the CBN area and in the Regional Study Area. In addition to using the workforce requirements, the model incorporated key factors that appear to influence the distribution of employment to these groups: labour supply, hiring preferences and challenges affecting level of local and regional employment. These key factors and the way they were used in the model are presented below. A description of the employment model and these employment challenges are provided in Section 3.2.1.1.

LABOUR SUPPLY

The labour supply portion of the model took the following into account:

- People already in the workforce; and
- Trainees that completed courses or programs of the HNTEI program implemented specifically for the Wuskwatim and Keeyask generation projects.

The employment model was applied to 2001 Statistics Canada occupational data for the Aboriginal workforce in the Regional Study Area, as well as to data regarding the outcome of the HNTEI program. Using these data as a base, the model generated projections of the Aboriginal workforce in the KCNs communities, in communities in the CBN area and in the Regional Study Area during the time period when Project construction would be underway.

HIRING PREFERENCES

The BNA and the JKDA are the two agreements in place that define hiring preferences for the construction phase of the Project. Based on the rules set out in these hiring preferences, the model was designed to undertake a sequence of simulated hiring as follows:

- For DNCs: Qualified KCNs workers were hired first. When the qualified KCNs labour supply ran out, qualified northern Aboriginal workers who were not KCNs Members were hired next; and
- For TCs: Qualified residents living in the CBN area were hired first. The CBN workers included KCNs workers and other CBN workers estimated according to a weighted average of their respective populations. When the CBN labour supply ran out, other qualified northern Aboriginal workers were hired.

OTHER CHALLENGES AFFECTING EMPLOYMENT

Challenges affecting employment were identified through community field research and a review of the Wuskwatim Generation Project experience regarding Aboriginal participation in construction employment. The review identified a number of factors/challenges that may affect the extent to which local and regional Aboriginal workers may be employed on the Project during the construction phase. The most important of these were incorporated into the employment model through the labour supply analysis and include the following:

- The extent to which qualified workers would be attracted to work on Project construction jobs;
- The extent to which local trades people and HNTEI trainees would be considered to have appropriate and sufficient work experience to be treated as qualified; and
- The extent to which potential applicants maintain their status in the job referral system and would therefore be eligible for referral when opportunities become available.

To characterize the effect of these challenges and to reflect uncertainty, low and high assumptions were applied in the employment model. Estimates that resulted in higher levels of KCNs, CBN and northern Aboriginal employment assumed that the influence of all of the challenges were less pronounced. In contrast, low employment estimates assumed that employment challenges were more pronounced. More detail regarding the assumptions made to incorporate employment challenges can be found in Section 3.2.1.1.

3.4.1.2.2 Construction Employment Estimates

Results of the Keeyask construction employment modelling analysis are presented below.

KEEYASK CREE NATIONS EMPLOYMENT EFFECTS

This section presents the estimated extent of participation by KCNs Members in Project construction employment, based on results of the employment supply/demand model. Key effects for discussion include person-years of employment and employment by job category. Analysis is also provided that estimates the percentage of available Project employment filled by qualified KCNs Members, as well as the job categories in which the KCNs estimated labour force would exceed the expected number of opportunities. Finally, estimates are provided for average total KCNs employment (quarterly and by job category).

Table 3-22 and Table 3-23 show the estimated person-years of employment for KCNs Members by job category for both high and low employment estimates. These tables do not include employment related to pre-construction activities or the Keeyask Infrastructure Project.

Table 3-22: Construction Phase Estimated Employment Participation by KCNs Members in the Keeyask Generation Project - High Employment Estimate (Person-Years)

	High Employment Estimate: KCN[1]									
Employment	**Construction Support**		**Non-Designated Trades**		**Designated Trades**		**MH and Supervisory[2]**		**Total**	
	PY	%	PY	%	PY	%	PY	%	PY	%
Total KCNs Participation	325	8%	170	4%	95	2	10	<1%	600	14%
Total Demand	852		952		1,346		1,068		4,218	

Source for the Demand: Derived from data provided by Manitoba Hydro in 2010.
Source for the Participation: Analysis prepared by InterGroup Consultants Ltd.
Notes:
1. Numbers are subject to rounding.
2. Estimated KCNs Participation within the Manitoba Hydro and Supervisory employment category resulted in a value of less than one percent.

Table 3-23: Construction Phase Estimated Employment Participation by KCNs Members in the Keeyask Generation Project - Low Employment Estimate (Person-Years)

	Low Employment Estimate: KCN[1]									
Employment	**Construction Support**		**Non-Designated Trades**		**Designated Trades**		**MH and Supervisory[2]**		**Total**	
	PY	%	PY	%	PY	%	PY	%	PY	%
Total KCN Participation	125	3%	45	1%	55	1%	10	<1%	235	6%
Total Demand	852		952		1,346		1,068		4,218	

Source for the Demand: Derived from data provided by Manitoba Hydro in 2010.
Source for the Participation: Analysis prepared by InterGroup Consultants Ltd.
Notes:
1. Numbers are subject to rounding.
2. Estimated KCNs Participation within the Manitoba Hydro and Supervisory employment category resulted in a value of less than one percent.

KCNs workers are projected to account for between 6% in the low employment estimate and 14% in the high employment estimate of the total construction workforce for the Project. This would constitute between 235 and 600 person-years of the 4,218 person-years of total construction employment. The participation percentages are strongly influenced by the relatively small number of qualified KCNs Members who could work on the Project relative to the large number of Project construction jobs that are available. While the percentage of the total appears to be relatively small, the absolute amount of employment is substantial for the KCNs as the Project is expected to involve a large percentage of available workers from the KCNs. The difference between the high and low estimates illustrates the effect that challenges to employment would potentially have on KCNs participation in construction employment. When these effects are assumed to be less prominent, KCNs employment is estimated to be substantially higher than when these challenges are assumed to have more influence.

For both high and low estimates of construction site employment, more than half of KCNs employment is expected to be in construction support occupations, while about one-third is expected to be in non-designated trades at higher estimates and about one-fifth at low estimates. About 18%-28% of KCNs employment is expected to be in designated trades and Manitoba Hydro and contractor supervisory occupations for low and high estimates, respectively.

Implications of these estimates are as follows:

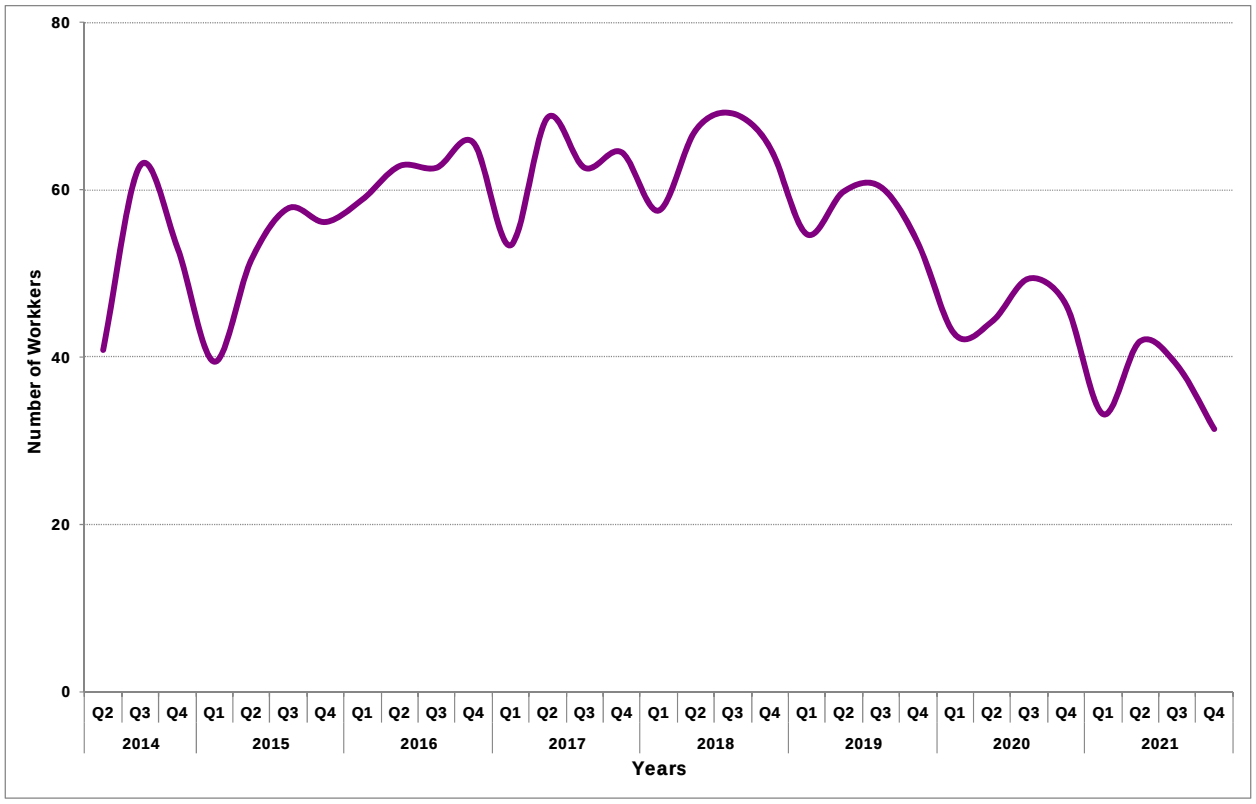
- In small to medium-sized First Nations these levels of employment could contribute noticeably to reducing unemployment levels for their rapidly growing labour force during the construction phase. If these were full-time positions, approximately 30 to 70 KCNs Members would be working throughout the construction phase. However, much of the Keeyask construction work would be seasonal and therefore, a person-year of work would be spread over several individual jobs. Assuming two jobs per person-year, the number of KCNs Members working during a given year would be on average 60 to 140 persons, which would be substantial in these high unemployment settings. This would vary among construction

years, reflecting differences in numbers and skills mix of workers required throughout the construction phase.

- The percentage of KCNs employment is affected by the nature of Project construction. Since the Project consists mainly of building the major civil works and installing mechanical and electrical equipment, the workforce requirements would be heavily oriented towards designated trades, requiring more trained and skilled workers. This would temper the levels of KCNs participation that could occur.

During construction, Project-related employment for KCNs Members will also be generated through on-site representatives, participation in technical and ATK monitoring programs, and community based job referral and partner implementation staff. These jobs will contribute at least 35-40 additional person-years of construction related employment for KCNs Members.

Figure 3-26 illustrates the quarterly peak employment levels of KCNs Members during construction of the Project.



Source: Analysis prepared by InterGroup Consultants Ltd.

Figure 3-26: Construction Phase Estimated Average Total Employment among KCNs Members (Number of Jobs Filled)

This figure illustrates the following:

- Throughout the construction phase from 2014 to 2021, KCNs employment is estimated to vary between 30 and 70 workers.

- Except for seasonal factors, KCNs employment is expected to remain steady. This is largely due to the high proportion of KCNs employment in DNCs most of which extend over the entire construction period. These contracts are expected to provide more stable employment than the TCs and produce higher levels of KCNs employment than comparable TCs.

The JKDA does include an employment target of 630 person-years of construction employment for the KCNs. The target includes their participation in construction of the generation project as well as their participation in Keeyask Infrastructure Project employment opportunities and all pre-construction employment following signing of the JKDA. The target is being measured and tracked by the Project partners through a separate process.

As with all major construction projects, Project-related construction employment levels in local communities will increase and decline and will eventually cease, contributing to a minor boom and bust situation. During the bust, local economic activity will decline and unemployment levels will rise in the Local and Regional study areas. However, this should be moderated in part by the experience gained during construction which will enhance the employability of KCNs Members and northern Aboriginal residents who have worked on the Project.

GILLAM EMPLOYMENT EFFECTS

In Gillam, during the construction phase, employment effects are expected to be generated primarily by direct construction employment and concentrated on FLCN Members living in Gillam. As one of the KCNs, employment effects on FLCN were already included in the KCNs employment analysis.

In addition, there could be a very small increase in employment in the Gillam retail and hospitality service sectors as a result of the spending of construction worker wages from two sources: increased income for FLCN Members who secure Project employment opportunities and expenditures by other construction workers visiting Gillam[1].

THOMPSON EMPLOYMENT EFFECTS

During the construction phase, employment effects in Thompson would primarily result from direct construction employment, in particular from KCNs Members living off-reserve in Thompson who would qualify for preferential hiring on the Project. These employment effects were already included in the KCNs employment estimate.

There could also be a small increase in employment in the retail/wholesale goods and services sector, hospitality services sector and transportation sector as a result of Project-related purchases by Manitoba Hydro and construction contractors; expenditures by KCNs Members who secure Project jobs; and expenditures by construction workers visiting Thompson.

[1] Hospitality services include accommodations, food and beverages services.

3.4.1.2.3 Mitigation/Enhancement

Key measures to enhance participation by KCNs Members and Aboriginal workers from the Regional Study Area in Project construction employment opportunities are already in place through the HNTEI, BNA and JKDA. These include:

- Pre-project training through the HNTEI undertaken between 2001 and 2010 to develop construction skills;
- The extensive use of DNCs and the opportunity for direct hire provisions within these contracts, as well as preferential hiring provisions for TCs and associated Job Referral Service;
- The employee retention and services contract, expected to be implemented by YFFN and FLCN, which includes cross cultural training and on-site counselling services;
- On-site employee liaison workers;
- Funding for the hiring of an Aboriginal union representative by the Allied Hydro Council of Manitoba;
- Establishment of the Advisory Group on Employment that can serve as a forum for KCNs and others to identify and discuss construction employment issues; and
- Community based job referral officers.

While the planned measures are extensive and address key issues affecting KCNs participation in construction jobs, the analysis of factors affecting employment suggests that it would be beneficial to focus additional effort on challenges that can affect worker's availability for construction employment. These challenges include:

- Maintaining a candidate's status in the job referral system;
- Reaching a selected candidate about a specific job opportunity;
- A candidate not accepting job offers; and
- The ability of the candidate to make arrangements to get to the job site.

Consideration should be given to implementing additional availability oriented measures to complement the measures that have already been implemented or are defined in existing agreements. A starting point for this would be reviewing the Wuskwatim Generation Project experience with the respect to the challenges affecting availability and identifying opportunities for addressing some of the challenges. This would be a joint effort involving the KCNs, Manitoba Hydro Project staff, the Job Referral Service, key contractors and other relevant stakeholders.

As with the Wuskwatim Generation Project, a Socio-Economic Monitoring Program (SEMP) to monitor key data will be prepared and implemented (see Chapter 8 of the Response to EIS Guidelines for further details).

3.4.1.3 Business Opportunities – Local Study Area

As in the case of employment, business opportunities represent tangible benefits associated with construction projects. This discussion focuses on the nature of potential Project contracts (*e.g.*, TCs versus DNCs), opportunities for joint ventures between Aboriginal-owned companies and others, as well as entrepreneurial

opportunities that may arise. Indirect business opportunities are also important considerations since the increased employment and business income can provide benefits to businesses such as restaurants and accommodation providers.

During the construction phase, the Project is expected to generate substantial business opportunities across the Regional Study Area. Businesses owned by the KCNs or their Members are being provided with the opportunity to negotiate directly on a group of contracts (the DNCs), which would cover a wide scope of Project construction work. In addition, businesses located within the Local Study Area have the opportunity to provide construction supplies and services to all contractors working on the Project. Particularly in the regional centre of Thompson, the retail/wholesale goods and services sector, the hospitality sector and the transportation sector will benefit from the large numbers of people moving to and from the construction site and spending their days off from work in local communities.

3.4.1.3.1 Keeyask Cree Nations

Article 13 of the JKDA outlines the business opportunities to be made available directly to the KCNs. These opportunities relate primarily to the construction and removal of Project infrastructure components (*e.g.*, access road and camp) and to the provision of services to construction workers at the site during construction (*e.g.*, food services, security services and employee retention).

The JKDA Schedule 13-1 identifies which contracts would be DNCs and indicates the KCNs communities being provided the opportunity to negotiate these contracts directly. The schedule includes both the Keeyask Infrastructure Project and the Keeyask Generation Project. Table 3-24 identifies the DNCs that apply to the Project and which of the KCNs communities have been identified for their implementation (excludes DNCs identified in the JKDA that are part of the Keeyask Infrastructure Project). In order to secure one of the 11 contracts identified in the JKDA available for allocation to the Project, a business is required to be majority owned by a KCNs community or be a Member of the KCNs. Manitoba Hydro will negotiate each contract on an individual basis with prospective businesses to establish contract provisions and a value acceptable to both parties. Several KCNs businesses, especially those with capacity in construction-related activities could potentially benefit through this process. These are identified in Section 3.3.2.1.

Table 3-24: Direct Negotiated Contracts for the Keeyask Generation Project

Code	Service Contracts	KCNs Allocation
SC-1	Catering	FLCN and YFFN
SC-2	Camp Maintenance Services	CNP
SC-3	Security Services	FLCN and YFFN
SC-4	Employee Retention and Support Services	FLCN and YFFN
SC-5	First-Aid Services	CNP
	Construction Contracts	
IC-2	Main Camp (Phase II only) - Site Preparation and Development	CNP
IC-5	Main Camp - Decommissioning	CNP
IC-8	South Access Road Construction	CNP
PS-1	Reservoir Clearing	CNP
PS-2	Painting and Architectural Finish	CNP
PS-5	Rock and Unclassified Excavation	CNP

Source: JKDA, Schedule 13-1 (CNP *et al.* 2009).

In total, 11 work packages as identified in Schedule 13-1 of the JKDA have been allocated to KCNs communities as DNCs. These contracts are expected to generate most, if not all, local direct business income from the Project. These contracts will follow a series of DNCs that were awarded to the KCNs for Keeyask Infrastructure Project. The experience gained in implementing the Keeyask Infrastructure Project contracts is expected to strengthen the KCNs capacity to undertake DNCs for the Keeyask Generation Project.

Manitoba Hydro's most recent hydroelectric development project under construction (Wuskwatim Generation Project) provides useful information on overall business benefits to the local First Nation; and is therefore a good predictor of anticipated Project outcomes. The Wuskwatim Generation Project experience reported by Nisichawayasihk Cree Nation indicates they were able to establish a building supply company to serve the Wuskwatim Generation Project; the supply company subsequently expanded into Saskatchewan. In addition, Nisichawayasihk Cree Nation created joint ventures with road construction, catering and camp maintenance companies, gaining valuable experience negotiating business partnerships and creating jobs and revenue for Nisichawayasihk Cree Nation. "NCN has also created its own environmental monitoring company Aski'Otutoskeo Ltd (AOL) to provide services as a contractor to Manitoba Hydro and other monitoring companies working on the project" (NCN 2011b).

At the time of this analysis, negotiations were ongoing between Manitoba Hydro and KCNs businesses regarding all potentially contracted DNC work. Final contract amounts were yet to be determined.

It is expected that most of the contracts will be carried out by joint ventures made up of a company owned by a KCNs partner and a non-KCNs company that has extensive experience in performing the type of work required by the contract. In all cases, the company owned by the KCNs party will own the largest share of the joint venture. This approach will enable the KCNs partner to maintain control of the contract and receive the

largest share of the profits to be generated. These business opportunities are also expected to generate the following important business benefits:

- The process of negotiating, managing and completing these contracts in a joint venture setting will provide valuable business experience to the KCNs owners and managers selected for the Project.
- The revenues associated with the Project could be used to finance payments for up to nine years on buildings, equipment and capital items that could be used to secure future contracts within the region.
- The relationships developed as part of the joint ventures could be used to pursue additional joint venture contracts on other construction projects.

These enhancements to KCNs-owned businesses could have the following broader benefits for the KCNs communities:

- Increase the capacity of local businesses to expand and pursue future business opportunities within and outside of their home communities, including construction of future hydroelectric projects;
- Increase the role of local businesses in meeting communities' needs in such areas as building and maintaining houses and infrastructure;
- Strengthen the local economy of KCNs communities; and
- Provide continuing construction job opportunities for community residents.

Should these outcomes materialize, the DNCs awarded to KCNs-controlled businesses would yield not only short-term benefits during the construction phase, but would also generate benefits after Project construction is completed. A key factor in achieving these longer-term benefits is the meaningful involvement of KCNs owners in managing the DNCs, rather than relying solely on the non-KCNs joint venture partners for these skills. This could benefit KCNs business capacity through increased revenue and resulting business enhancements (*e.g.*, equipment upgrades). It could also lead to improved credibility of KCNs as viable, capable and progressive business owners, potentially leading to other business opportunities.

Some business opportunities are expected to result from the general increase in economic activity that would take place across the Local Study Area. Some of the employment income earned at the job site would be spent by Members of KCNs communities to support their households. The increased income resulting from the employment opportunities created by the Project could increase the market potential for businesses in KCNs communities, primarily for items such as groceries and other household items. This could contribute to improved viability of retail and consumer service businesses located in these communities. However, it should also be noted that the scope of services in these communities is limited and it is likely that spending of worker wages would also occur at businesses in other locations (*e.g.*, the regional centre of Thompson).

3.4.1.3.2 Gillam

During construction, business opportunities in the Gillam area relate primarily to the potential increase in demand for transportation and hospitality services by workers and other people associated with the Project as they travel to and from the construction work site. There could be some increased demand for construction-related supplies and services, although the current scale of construction-related retail services available in Gillam would likely limit these opportunities.

3.4.1.3.3 Thompson

Thompson could benefit from construction-related purchases. As the regional retail centre with the most well-established supply chains, Thompson is likely to be the source of these kinds of transactions. While the potential for increased demand for construction goods and services is not likely to result in new retail businesses being established in Thompson, there would be a substantial opportunity for existing businesses to increase sales and modify product lines in anticipation of this increased demand. Based on experience with the Wuskwatim Generation Project, the value of these purchases could be in the tens of millions of dollars. Businesses in the transportation, industrial supply and energy supply sectors would likely benefit most.

Business opportunities in the Thompson area could also arise from an increase in demand for transportation and hospitality services by workers and other people associated with the Project as they travel to and from the construction work site. In addition, some non-local construction workers are likely to spend time in Thompson during their days off, increasing business opportunities in these same sectors.

In recent years, the Thompson economy experienced very rapid growth, mainly as a result of major facility expansion and modernization undertaken by Vale. While this growth led to increased sales volumes for many local businesses, it also contributed to labour shortages in the local retail and consumer service sectors making it difficult for businesses to meet customer needs and to take full advantage of available opportunities. This local competition for labour put upward pressure on wages, which in turn led to rising local prices in some sectors, particularly in hospitality, trades and transportation-related sectors. The high demand for skilled trades resulted in labour shortages for many businesses, which led to schedule and cost implications for these businesses.

The anticipated Vale smelter and refinery closure (in 2015) may change the character of Thompson's economy from one of rapid growth with labour shortages to no growth or declining growth with labour surpluses. Local businesses could shift from a position of insufficient capacity to excess capacity. These changes may occur while Project construction is taking place. In this new context, the modest business opportunities flowing from Project expenditures would shift from potentially exacerbating existing labour shortages to being beneficial for the Thompson business community, offsetting some of loss in activity arising from the smelter closure.

Monitoring should be undertaken to determine what influence Project-related expenditures during construction have on the level of business activity and employment in Thompson. This could be done through a survey of relevant Thompson businesses. It is recognized that it will be difficult to isolate Project effects from other factors influencing the Thompson economy; nevertheless, even a limited understanding of these effects would be useful given the varied prospects for this city's economy in the future.

3.4.1.3.4 Mitigation

The DNCs are the most important measures for enhancing KCNs participation in Project business opportunities. Other measures for enhancing local business participation during the construction phase include the following:

- Provide a mechanism to identify entrepreneurial opportunities associated with Project construction; and
- As occurred in the Wuskwatim Generation Project, maintain communication with appropriate organizations on opportunities through Manitoba Hydro's Northern Purchasing Policy.

Monitoring will be undertaken as part of a SEMP, and will include tracking direct purchases, a KPI program in Thompson, Gillam and the KCNs communities to ascertain any indirect business opportunities generated as a result of the Project and KPIs with key participants in managing the DNCs.

3.4.1.4 Income – Local Study Area

New income would be generated in two ways in the Local Study Area during the construction phase of the Project: through wage employment and through business. Employees would be attracted to the Project in anticipation of the opportunity for new, and in some cases higher, income. In turn, once that income is earned, indirect economic activity would occur in nearby communities, particularly in the retail and hospitality sectors through the spending of wage income. These effects would become apparent early in the construction phase and would last until construction is complete.

The following discussion addresses direct employment income and business income. For employment income, gross and net income is estimated for construction employment. Business income, which consists of profits from increased business activity, is presented for the DNCs. Other sources of employment and business income including from local purchases by Manitoba Hydro and contractors and re-spending by Project workers have not been estimated. The following sections are broken down by employment and business income effects, with separate sections provided for effects specific to the KCNs, Gillam and Thompson.

3.4.1.4.1 Keeyask Cree Nations Income Effects

EMPLOYMENT INCOME

Table 3-25 provides a summary of estimated gross employment income by contract type and job category that would accrue to KCNs workers during the construction phase. These estimates are provided for all contracts (DNCs and TCs) and have been presented for two scenarios: high and low which encompass a combination of high and low employment estimates and wage ranges. Methodological details regarding these wage ranges are provided in Section 3.2.3.

Table 3-25: Construction Phase Estimated KCNs Gross Employment Income from the Keeyask Generation Project (in millions of dollars)

	High Wage Range			Low Wage Range		
	All Contracts	DNC	TC	All Contracts	DNC	TC
Construction Support	31.7	27.9	3.8	9.8	9.4	0.4
Non-Designated Trades	17.6	11.8	5.8	3.6	3.0	0.6
Designated Trades	12.3	7.8	4.5	7.6	5.3	2.3
Subtotal	61.6	47.5	14.1	21.0	17.7	3.3
Manitoba Hydro And Contractor Supervisory	0.6			0.6		
Total	62.2			21.6		
Construction Support	51%	45%	6%	47%	45%	2%
Non-Designated Trades	29%	19%	9%	17%	14%	3%
Designated Trades	20%	13%	7%	36%	25%	11%
Total	100%	77%	23%	100%	84%	16%

Sources: Derived from data provided by Manitoba Hydro in 2010 with analysis prepared by InterGroup Consultants Ltd.
Note:

- Numbers do not always add due to rounding. Actual results will vary from estimates provided here.

Keeyask Cree Nations workers are expected to earn between $21 and $62 million working on construction of the Project. Most of this income would be generated from DNCs, even though these contracts only represent about 27% of total Project employment.

The high level of KCNs employment on DNCs illustrates the importance of the DNCs to KCNs employment income. The importance of the DNCs can also be seen by comparing total KCNs income to estimated construction employment income that would accrue to the whole CBN area (see Section 3.4.1.8). Keeyask Cree Nations represents about 23% of the total CBN population, yet it is estimated that KCNs would secure between approximately 50% to 60% of CBN employment and gross employment income. Keeyask Cree Nations and CBN workers would share the same preferences on TCs.

Monitoring would be undertaken to determine the amount of gross labour income accruing to KCNs Members from Project construction employment.

BUSINESS INCOME

While businesses with awarded DNCs would be active during the entire course of the construction phase, profits from these contracts would depend substantially on how well the contractors are able to manage their costs over the length of the contracts. Profits generated and business income created by the DNCs would only be evident after the contracts are completed. If costs are effectively managed, profits in excess of $15 million could be earned on the DNCs, of which more than half could accrue to KCNs businesses, who must

own at least half of the contracted enterprises. This level of profit is based on a target return of 10% of contract earnings.

3.4.1.4.2 Gillam

Gillam would experience some income benefits as a result of the Project. Employment income would accrue primarily to FLCN Members living in Gillam; that income is included in estimates of employment income accruing to KCNs workers as a whole in Table 3-25.

Income benefits would also result from the increased economic activity that is estimated to occur in Gillam during the construction phase of the Project. This would affect both employment and business income for workers and businesses in the transportation, hospitality, retail and construction sectors. This spending is dependent on individual spending preferences of employees, therefore, quantitative estimates of spending in the specific Gillam economy are difficult to determine.

3.4.1.4.3 Thompson

Thompson is expected to experience some income benefits as a result of construction of the Project. Employment income effects would accrue primarily to the city's Aboriginal population many of whom are likely to have some level of hiring preference for Project construction jobs. Income benefits would also result from the increased economic activity that would occur in Thompson as a result of the Project. Income received through Project employment is expected to lead to indirect economic activity in Thompson, particularly in the construction, retail/wholesale goods and service and hospitality sectors. In turn this would affect both employment and business income for workers and businesses in these sectors. As in the case of Gillam, this spending is dependent on the type and location of preferences of individual employees and, therefore, quantitative estimates in the specific Thompson economy are difficult to determine.

3.4.1.4.4 Mitigation

No mitigation or enhancement is required.

3.4.1.5 Cost of Living – Local Study Area

Discussion regarding cost of living is intended to capture issues associated with the higher costs for housing, food and household items and transportation in northern communities. The increased employment and business opportunities associated with large construction projects can potentially affect these costs.

In addition to effects related to direct employment, business and income, construction of the Project is expected to result in indirect expenditures in the Local Study Area. Local construction workers and their families could increase their purchases of retail products, transportation and hospitality services as a result of increased income from the Project. Non-local workers could spend more money on transportation, and hospitality services. Local firms that sell products and services for businesses could also see an increase in sales to contractors. While these expenditures are likely to occur primarily in Thompson, some, particularly retail products and services, may also occur in other Local Study Area communities.

Despite the potential for increased purchases, local spending and construction-related expenditures associated with the Project are unlikely to affect the cost of living in the Local Study Area. Construction-related expenditures are anticipated to be concentrated in Thompson, where the size of the local economy would

likely diffuse the effects of such spending. Spending in the other Local Study Area communities would tend to be focused on locally available goods and services, which are relatively limited.

In general, increased spending in the Local Study Area is estimated to have little effect on the differences in cost of living between these communities and communities in southern Manitoba. In Thompson, a heated economy in recent years created labour and housing shortages. If this continued, additional spending may compound existing local economic pressures. However, the recent announcement that Vale expects to close its Thompson smelter and refinery could noticeably change that situation. In any event, it is difficult to determine quantitatively the extent to which any pressure would be attributable to Project-related spending.

The discussion below is organized by community (KCNs, Gillam and Thompson), with food and household items, transportation and housing considered separately for each.

3.4.1.5.1 Keeyask Cree Nations Communities

Cost of living in KCNs communities could be affected mainly by the spending of residents and their families who work on the Project. They are unlikely to experience an increase in their costs and associated product and service prices as a result of expenditures related to Keeyask construction. Reasons for this include the following:

- While the income of local residents working on Project construction would likely grow considerably, their local purchases are not likely to increase proportionately since they are already purchasing most of what is available locally. Local purchases would continue to be limited by the types of retail and consumer products available in their community.
- For locally available products and services, the capacity of retail and consumer service suppliers is either adequate, or on the verge of expanding.
- Underemployed labour is available for businesses to draw on if they need additional staff to deal with increased sales. Pressure on local wages is moderated when such resources are available.

Although an increase in costs is unlikely, some increased spending power in KCNs communities may prompt some retail and consumer service providers to widen their product or service range in order to capture a larger share of the growing market. If this happens, the range of locally available goods and services could be enhanced.

FOOD AND HOUSEHOLD ITEMS

In Split Lake, the Northern Store, Arctic Beverages, Old Dutch and Grey Goose bus lines provide regular shipments of goods into the community. Increased purchasing power among Split Lake residents could increase sales across all categories, encouraging wider selection while potentially exerting downward pressure on prices. To some extent, however, a lack of local competition and high transportation costs may dampen this pressure.

An increase in employment income and purchasing potential among construction workers and their families will likely lead to increased spending at the Mooseocoot Convenience Store and Gas Bar (opened April 27, 2010) in Ilford. An increase in spending by Ilford residents will also likely occur in Thompson or Gillam. No effect on the cost of food and household items in Ilford is anticipated.

Despite the recent closure of the Groceteria in Fox Lake (Bird), the community expects a new store to open in the near future. The Ripple River Store in York Landing (*Kawechiwasik*) closed in early 2010 and reopened in fall 2010 under management by YFFN. The increased purchasing power anticipated in each community could increase total sales and profitability at these existing/proposed stores and improve the likelihood of success of existing retailers and consumer service outlets.

TRANSPORTATION

Since KCNs communities are located in the vicinity of the Project, KCNs workers are more likely than other workers to travel to and from the construction work site during their days off. This would increase demand for transportation between the site and these communities.

Split Lake is accessible year-round by road. Travel by personal vehicle to the job site or to Thompson for shopping would not result in any increase in transportation costs for TCN Members at Split Lake.

Ilford is accessible by road only when the winter road is in operation. During the remainder of the year, workers would use a combination of bus (from Project site to Thompson or Gillam) and the railway to commute back to their community. Rail transport is likely to have sufficient excess capacity to handle the number of additional passengers travelling between the job site and the community (although schedule can be uncertain). Therefore, the cost of transportation for WLFN/Ilford residents is unlikely to be affected by the increased use of winter road or rail transportation.

Fox Lake (Bird) is accessible year-round by road. Travel by personal vehicle to the job site or to Thompson for shopping and recreation would not result in any transportation cost increases for Fox Lake residents of Fox Lake (Bird) or Gillam. Fox Lake (Bird) is also accessible by rail, where there is adequate capacity for any additional increase. The Project is unlikely to affect the transportation costs of Fox Lake (Bird) residents during the construction phase.

York Landing (*Kawechiwasik*) is accessible by ferry in summer and by winter road for a short period in winter. Travel by road when these options are available is not expected to increase the transportation costs for YFFN Members at York Landing (*Kawechiwasik*). During the remainder of the year, access is only available by air to Thompson. The increased potential for demand for air travel may encourage carriers to increase the number of flights offered to the community and improve service.

HOUSING

Should off-reserve families of KCNs construction workers wish to return to their home communities with KCNs Project workers, they would find housing to be in short supply. However, because housing is largely developed and owned by each First Nation, the constraint tends to be available First Nation housing dollars rather than the financial capacity of individual families. Therefore, the effect of returning population, to the extent that this is expected (see Section 4.4.1.2), is unlikely to elevate housing costs.

3.4.1.5.2 Gillam

Similar limited effects on cost of living would be expected in Gillam, where the majority of any additional construction workers and their families would be FLCN Members. Additional expenditures would also arise from spending of construction workers and their families, and by visiting construction workers and visitors passing through on flights landing in the community.

FOOD AND HOUSEHOLD ITEMS

The community has a basic range of retail and consumer service suppliers who often struggle to achieve stable operations. The expected increase in Project-related spending in Gillam could increase the available selection of products and services, but is unlikely to affect local prices. Planning is underway to develop a new mall in the community that should improve local retail and service capacity. The presence of a more modern facility and increased commercial space should help to temper effects of increased Project-related spending on local retail and service prices (Gillam KPI Program 2009-2010).

Local labour costs are unlikely to contribute to upward pressure on prices because additional workers are available in the Gillam area to handle increased activity in the retail and consumer service sectors (*e.g.*, families of Manitoba Hydro employees and FLCN Members who do not plan to participate in Project construction employment or are not qualified for them).

TRANSPORTATION

Demands for air transportation and all forms of ground transportation are likely to increase. However, since these services are provided by large suppliers, whose prices are determined by broader market considerations, increased demand is unlikely to affect local prices for these services.

HOUSING

During construction, Gillam is unlikely to experience housing-related cost of living effects as a result of the Project. The only Project-related in-migration to Gillam during the construction phase is expected to be by FLCN Members and they are likely to seek access to First Nation housing in the community. Furthermore, most other available rental units in Gillam are controlled by Manitoba Hydro for use by Manitoba Hydro employees. There is little turnover among the remaining units in the town. Therefore, there is little opportunity for price increases even if demand for rental housing grew (Gillam KPI Program 2009-2010).

3.4.1.5.3 Thompson

The situation in Thompson may be different from that of other communities in the Local Study Area. A more detailed discussion regarding various Thompson growth scenarios can be found in Appendix 4C. The city has experienced rapid economic growth in recent years, which has led to labour shortages and associated upward pressure on wages, including demand for lower-skilled workers, as well as housing shortages and sharply rising housing prices and rents. If the Thompson economy continues to grow up to and during the early years of Project construction, added expenditures occurring in Thompson due to the Project, could lead to further labour shortages, forcing labour costs higher and precipitating local price increases.

However, future effects would change if Vale follows through with their announcement and closes down its smelter in Thompson by 2015. The city's economy would be expected to slow down leading to surplus capacity in the local labour markets and in various local business sectors. Under these circumstances, Project-related increases in expenditures in Thompson are unlikely to affect local prices. Surplus labour and business capacity would provide a buffer to inflationary pressures. Project-related effects on inflation are likely to vary over the course of construction in Thompson. However, due to the multiplicity of factors affecting inflation in Thompson, it is not possible to isolate quantitatively the contribution of the Keeyask Generation Project to cost of living.

FOOD AND HOUSEHOLD ITEMS

Thompson is already well-serviced by national retail grocery stores. Short-term increases in the purchasing power of a small portion of residents working on the Project are, therefore, unlikely to affect the price of food and household goods within the community.

Increased economic activity related to the Project caused by workers traveling to Thompson for shopping and entertainment may increase the demand for labour at retail and hospitality establishments. Potential effects on cost of living would depend on the growth scenario that unfolds.

It is expected that if Vale moves forward with its plan to shut down the smelter and refinery during the same timeframe as Project construction, the Thompson economy may grow more slowly or enter a state of decline during the construction phase of the Project. If this were to occur, then any inflationary effect is unlikely to materialize and local labour shortages could be expected to relax.

TRANSPORTATION

As the Regional Study Area's main transportation hub, Thompson would likely experience an increase in volume in all modes of travel. The main increases likely would occur in air travel into the region from the south and bus travel between Thompson and Gillam. This could improve service if carriers respond with increased flights and buses. However, adverse effects on transportation services could result from a decrease in the number of seat sales or other incentives along popular routes; or over-filled planes/buses if carriers do not increase the level of service.

There would be increases in ground traffic approaching Thompson from the south on PTH 6 and PR 391 and PR 280 between Thompson and the Project site. However, the main artery in Thompson (Mystery Lake Road) is capable of handling the scale of Project-related increases. Effects of traffic are discussed in Section 4 and Section 5.

HOUSING

Thompson's recent strong local economy resulted in a housing shortage, driving up the cost of housing units in the city. However, additional pressure is not anticipated in this market as a result of the Project. Few construction workers and their families are expected to move to Thompson for the following reasons:

- There is little advantage for an employee to relocate his or her family to Thompson, since it is too far from the Project site for daily commuting.
- Project construction workers receive free board and room while working on the Project.
- High housing costs and existing shortages in affordable housing in Thompson are likely to be a deterrent to workers who may be considering relocating there.

3.4.1.5.4 Mitigation

No mitigation, enhancement or monitoring is required.

3.4.1.6 Resource Economy – Local Study Area

Further detail regarding effects on resource use in the Local Study Area is provided in the Resource Use section of this supporting volume. Based on this analysis, relevant findings related to various types of resource use have been extracted (*e.g.*, commercial trapping), and these findings are summarized in terms of their effects on income and livelihood in the resource sector of the local economy. The analysis does not include effects on Manitoba Metis Federation and Cross Lake First Nation (Pimicikamak Okimawin). At the time this report was being prepared, Manitoba Hydro was working with the Manitoba Metis Federation and Cross Lake First Nation (Pimicikamak Okimawin) to undertake studies funded by Manitoba Hydro on the effects of the Project related to resource use of their members (see Chapter 3, Section 3.4.1 of the Response to EIS Guidelines). Project effects on the resource economy during the construction will be a result of the following:

- Disturbances to wildlife resources and habitat loss due to noise and construction-related activity in the vicinity of the Project;
- Shifting patterns of resource use through the KCNs AEA Offsetting Programs;
- Improved access from Project-related roads;
- An influx of workers potentially creating additional resource harvesting pressure; and
- Changes in lifestyles of local resource harvesters who choose Project employment.

During construction, domestic resource use, commercial trapping and tourism (commercial lodges and outfitters) will be affected; however, the effects identified are expected to have limited consequences on cash and in-kind income of the affected resource users. Losses of in-kind income from reduced domestic resource use in the immediate vicinity of the Project are expected to be offset by the KCN's AEA Offsetting Programs that provide access to resource harvesting at alternative and unaffected locations; as well as to fish for consumption in communities. No further analysis on domestic resource economy is needed.

3.4.1.6.1 Commercial Resource Economy

COMMERCIAL TRAPPING

During Project construction, effects on the commercial trapping sector of the resource economy would likely result from increased opportunities for participation in the wage economy, construction activity in the immediate vicinity of the Project (issues related to noise and dust, resource user safety and reduction in furbearing mammals) and shifting patterns of resource use due to off-setting programs.

During the construction phase of the Project, access along the north and south access roads will be controlled by security gates. A Construction Access Management Plan will determine who is permitted on the site and will include limitations on use of the roads by construction workers, domestic resource users and other members of the general public. Licensed trappers will likely have unlimited access to their traplines where there are no construction safety-related concerns and they will be able to continue trapping and opportunistic hunting activities as per the Construction Access Management Plan.

The new work site population and activity in the area may be detrimental to trappers' abilities to trap productively, particularly for Traplines 15 and 9, where possible disturbance to traps could occur. Measures

would be in place to mitigate this potential disturbance (including the Construction Access Management Plan and camp rules). Similarly, the increase in noise and dust could cause furbearing animals to move away from the area. The nature and magnitude of effects associated with disturbance caused by Project construction are largely related to individual perceptions of these disturbances, including how far away from traps they are occurring (*e.g.*, from dust and noise related to road traffic). In general, the effect on trapping income from these sources is expected to be minor.

Increases in the wage economy in the Local Study Area during construction may lead to small, short-term decreases in the number of people engaging in commercial trapping to the extent that trappers choose to participate in construction employment opportunities. Alternatively, those engaged in commercial trapping may view Project employment as a means to earn additional income in order to purchase additional and/or better equipment, thereby improving their ability to undertake trapping activities. Project construction work would largely be seasonal in nature, with less activity during the winter months. Trappers from the Local Study Area who would participate in Project employment are unlikely to be employed during the winter months (see Project Description Supporting Volume, Section 3.9.1) when most commercial trapping activity takes place. This would dampen the extent to which trapping activity is reduced due to Project employment. The extent of these effects is dependent on the personal preferences of individuals and the seasonality of employment opportunities with respect to winter trapping activity.

Shifting patterns of resource use could also occur during Project construction. Increased domestic use in offset program areas would increase the frequency with which traplines and cabins are utilized. There may be times when trapline holders are not Members of the community from which offset programs are based, potentially creating conflict among competing resource users (*i.e.,* First Nation, Metis and non-Aboriginal resource harvesters). A substantial effect on trapping is not expected because the highest level of activities related to the AEA Offsetting Programs are in spring and fall instead of winter when trapping activities are at their highest level. Further, within communities, licensed trappers are recognized and respected as stewards of the furbearer resources. Harvest of furbearers without permission of the trapline holder is not expected to occur as part of the offsetting program. Despite these potential challenges, it is important to note that the access programs are fundamental to the integrity of the community and the Cree cultural identity.

COMMERCIAL FISHING

Several aspects of Project construction could potentially affect the viability of commercial fishing including the presence of a large workforce, disturbances from Project construction and increased opportunities to participate in the wage economy. As described below, these effects are related primarily to the viability of the commercial fishing economy through effects on fish populations themselves, as well as associated infrastructure and safety issues. There is also a potential effect related to individuals choosing employment on the Project who might otherwise engage in commercial fishing.

Some Project construction workers may choose to engage in shore-based recreational fishing, thereby contributing to a perception of increased competition for commercial fish resources and concerns over decreased harvest. However, the harvest from this recreational fishing is expected to be of a relatively low level and the commercial resources of these lakes are considered sustainable (see the Resource Use Section of this Supporting Volume).

Disturbances resulting from Project construction may also affect the circumstances of the small-scale Stephens Lake fishery. Construction activities would take place in relatively close proximity: approximately four kilometres from key fishing locations at the inlet to Stephens Lake. Although the nature and magnitude of these effects remain uncertain (*e.g.*, potential for fish to change the areas in which they congregate as a result of changes in flow), there is likely to be an effect on the Stephens Lake fishery as fishers are forced to seek out new areas and are potentially subject to decreased harvests. As in the case of trapping, an increase in the wage economy during construction may cause short-term decreases in the number of individuals interested in engaging in commercial fishing, particularly since a considerable portion of the potential construction jobs overlaps with the commercial fishing season (spring and fall). The level of effect would depend on individual preferences for undertaking these activities. The average annual fishing income is just over $5,000/year, earned over a short period of time (see Resource Use Section); since Project employment wages are considerably higher, one might expect that participation in wage employment may be chosen over commercial fishing. Alternatively, as in the case of commercial trapping, those engaged in commercial fishing may view Project employment as a means to earn additional income to purchase equipment in order to improve their ability to undertake commercial fishing activities. Discussions with TCN fishers suggest that this will not be an issue on Assean Lake or Split Lake where none of them expect to take Project employment. Discussions are underway with the affected fisherman on Stephens Lake to be compensated for losses and damages incurred related to the single-licence fishery.

TOURISM, COMMERCIAL FORESTRY AND MINING

These activities occur mainly outside of the Local Study Area and within the Regional Study Area, as such, they are discussed in Section 3.4.1.11.

Increases in traffic on PR 280 have the potential to affect one outfitter based in Gillam whose operation uses the roadway corridor for bear hunting. Increased traffic and population due to the large workforce may increase the risk of disturbance to bear baits, while also reducing aesthetics for clientele, thereby potentially affecting the viability of the business. Education and communication initiatives would be in place for workers as a means of mitigation, through the relevant Environmental Protection Plan and Monitoring Program.

Concerns have been raised about potential risks to the property and operations of lodges and outfitters located on or near lakes being used as alternate harvesting areas under the TCN Access Program as defined in their AEA. TCN has adopted guidelines and principles for its Members when they are participating in the AEA Access Program. The guidelines and principles include respect for the land and environment including leaving areas clean, respect for others and their property, and conducting selective harvesting including applying traditional and cultural values on all harvesting activities. Implementation of these guideline and principles should largely mitigate potential adverse effects on lodges and outfitters. An exception may be that some customers sense a loss of their "wilderness experience" from meeting participants of the AEA Access Program while they are using a lodge or outfitters services.

During construction there are no Project effects expected on mining; and effects on forestry are expected to be negligible (see Resource Use Section 6.7.4).

3.4.1.6.2 Mitigation

Losses of in-kind income from reduced domestic resource use in the vicinity of the Project are expected to be compensated for by the Offsetting Programs contained in the AEAs that provide access to resource harvesting at alternative and unaffected locations. Trapline 15 domestic resource users are expected to be compensated for any decrease in domestic harvesting through a compensation agreement.

Losses experienced by commercial trappers will be compensated. Provisions exist in the TCN AEA (Members Claims) and FLCN AEA (Citizens Claims) to provide for losses in net revenue and damages to property incurred by commercial trappers on a Registered Trapline. These provisions are expected to address any Project-related losses experienced on the potentially affected traplines, which are Traplines 15, 9, 25 and 7. A five-year, extendable disturbance agreement has been reached with the holder of Trapline 9; an annual agreement with Trapline 15 is expected to be reviewed and renewed as needed on an annual basis; and a compensation agreement is expected to address the minor effects to Traplines 7 and 25 (a TCN community trapline).

Project-related effects during construction are expected to result in closure of the small-scale Stephens Lake fishing business that operates under a special licence to sell fish locally in Gillam and Churchill. Discussions between the operator and Manitoba Hydro are underway at the time of submission.

Implementation of TCN's guidelines and principles for the TCN Access Program should largely mitigate potential effects on lodges and outfitters located at or near alternate harvesting destinations. The guidelines and principles include respect for the land and environment (leaving areas clean and respecting others, including refraining from acts of aggression and disrespect to property). No further mitigation is required.

3.4.1.7 Construction Employment Opportunities – Regional Study Area

This section examines participation by Aboriginal residents of the Regional Study Area as a whole in construction employment opportunities associated with the Project. As was set out in Section 1.3.2, the Regional Study Area is defined according to the BNA. Also considered in this section, is participation by residents of the CBN area, a subset of the Regional Study Area that encompasses communities that have been affected by past hydroelectric development (also defined in Section 1.3.2).

Construction employment participation was estimated for qualified Aboriginal residents in the CBN area (the area designated for first order hiring preference on TCs) and for qualified Aboriginal workers in the Regional Study Area as a whole (the region for third-order hiring preference on all contracts).

The CBN area includes the KCNs communities, so all CBN employment results presented in this section incorporated KCNs employment estimates discussed earlier in this section. Similarly, estimates presented for the Regional Study Area incorporated employment estimates for the CBN area.

Employment estimates are presented in person-years (for high and low estimates) and by job category.

3.4.1.7.1 Churchill-Burntwood-Nelson Employment Effects

Table 3-26 and Table 3-27 present person-years of construction employment estimated to be taken up by qualified Aboriginal residents of the CBN area, by job category, under high and low employment estimates respectively.

Table 3-26: Construction Phase Estimated Participation by the Churchill-Burntwood-Nelson Aboriginal Workforce in the Keeyask Generation Project (Person-Years) – High Employment Estimates

	High Employment Estimates: CBN									
Employment	**Construction Support**		**Non-Designated Trades**		**Designated Trades**		**MH and Supervisory**		**Total**	
Total CBN (including KCNs)	510	12%	420	10%	230	5%	35	1%	1,195	28%
Total Demand	852		952		1,346		1,068		4,218	

Source for the demand: Derived from data provided by Manitoba Hydro in 2010.
Source for the participation: Analysis prepared by InterGroup Consultants Ltd.
Note:
- Numbers are subject to rounding.

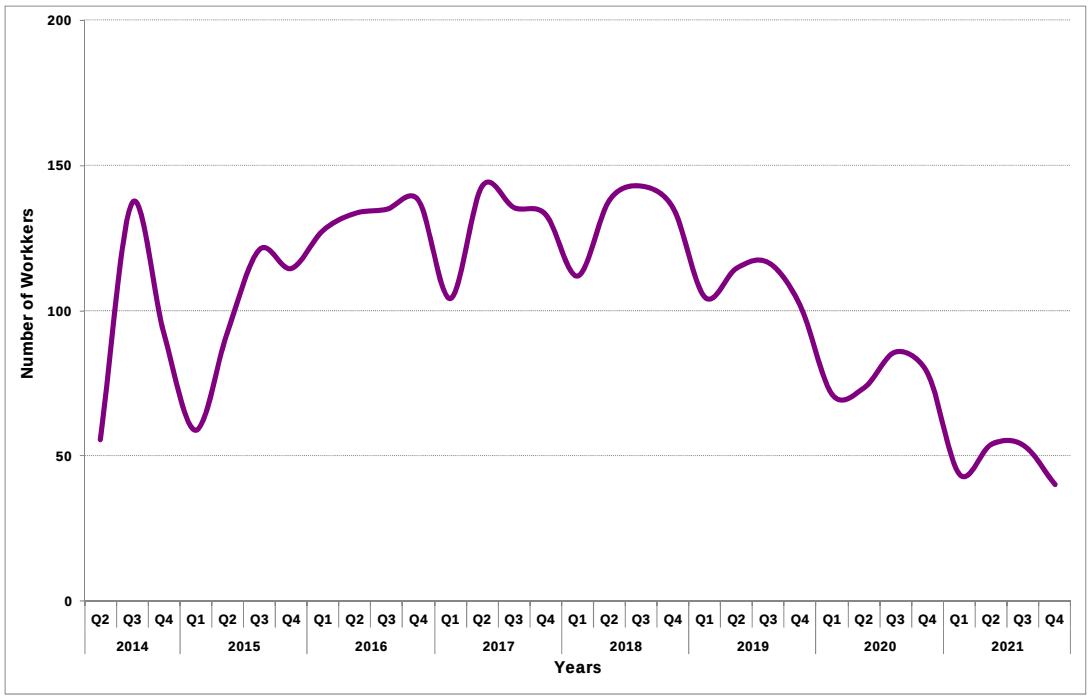
Table 3-27: Construction Phase Estimated Participation by the Churchill-Burntwood-Nelson Aboriginal Workforce in the Keeyask Generation Project (Person-Years) - Low Employment Estimates

	Low Employment Estimates: CBN									
Employment	**Construction Support**		**Non-Designated Trades**		**Designated Trades**		**MH and Supervisory**		**Total**	
	PY	%	PY	%	PY	%	PY	%	PY	%
Total CBN (including KCNs)	160	4%	100	2%	95	2%	35	1%	390	9%
Total Demand	852		952		1,346		1,068		4,218	

Source for the demand: Derived from data provided by Manitoba Hydro in 2010.
Source for the participation: Analysis prepared by InterGroup Consultants Ltd.
Note:
- Numbers are subject to rounding.

Aboriginal workers from the CBN area are predicted to obtain between 390 and 1,195 person-years of employment representing 9% (low estimate) and 28% (high estimate) of Project construction employment opportunities .Approximately two thirds of Aboriginal participants from the CBN area are expected to be employed in construction support and non-designated trades opportunities. Designated trades and Manitoba Hydro and supervisory jobs would account for approximately one-third of this employment.

As shown in Figure 3-27, participation by Aboriginal workers from the CBN area is estimated to vary between about 40 and about 140 workers over most active years of the construction phase.



Source: Analysis prepared by InterGroup Consultants Ltd.

Figure 3-27: Construction Phase Estimated Average Employment of the Churchill-Burntwood-Nelson Aboriginal Workforce

3.4.1.7.2 Regional Study Area Employment Effects

Participation by Aboriginal workers from the Regional Study Area as a whole (including Aboriginal workers from the KCNs and the CBN area) was estimated to range between 13% (low estimate) and 40% (high estimate) of total Project construction employment, representing between 550 and 1,700 person-years of employment (see Table 3-28 and Table 3-29).

Table 3-28: Construction Phase Estimated Employment Participation by the Northern Region Aboriginal Workforce in the Keeyask Generation Project (Person-Years) – High Employment Estimates

High Employment Estimates: Regional Study Area										
Employment	**Construction Support**		**Non-Designated Trades**		**Designated Trades**		**MH and Supervisory**		**Total**	
	PY	%	PY	%	PY	%	PY	%	PY	%
Regional Study Area Aboriginal Workforce (incl. CBN)	750	18%	535	13%	310	7%	105	2%	1,700	40%
Total Demand	852		952		1,346		1,068		4,218	

Source for the Demand: Derived from data provided by Manitoba Hydro in 2010.
Source for the Participation: Analysis prepared by InterGroup Consultants Ltd.
Note:
- Numbers are subject to rounding.

Table 3-29: Construction Phase Estimated Employment Participation by the Northern Region Aboriginal Workforce in the Keeyask Generation Project (Person-Years) - Low Employment Estimates

Low Employment Estimates: Regional Study Area										
Employment	**Construction Support**		**Non-Designated Trades**		**Designated Trades**		**MH and Supervisory**		**Total**	
	PY	%	PY	%	PY	%	PY	%	PY	%
Regional Study Area Aboriginal Workforce (incl. CBN)	225	5%	115	3%	105	2%	105	2%	550	13%
Total Demand	852		952		1,346		1,068		4,218	

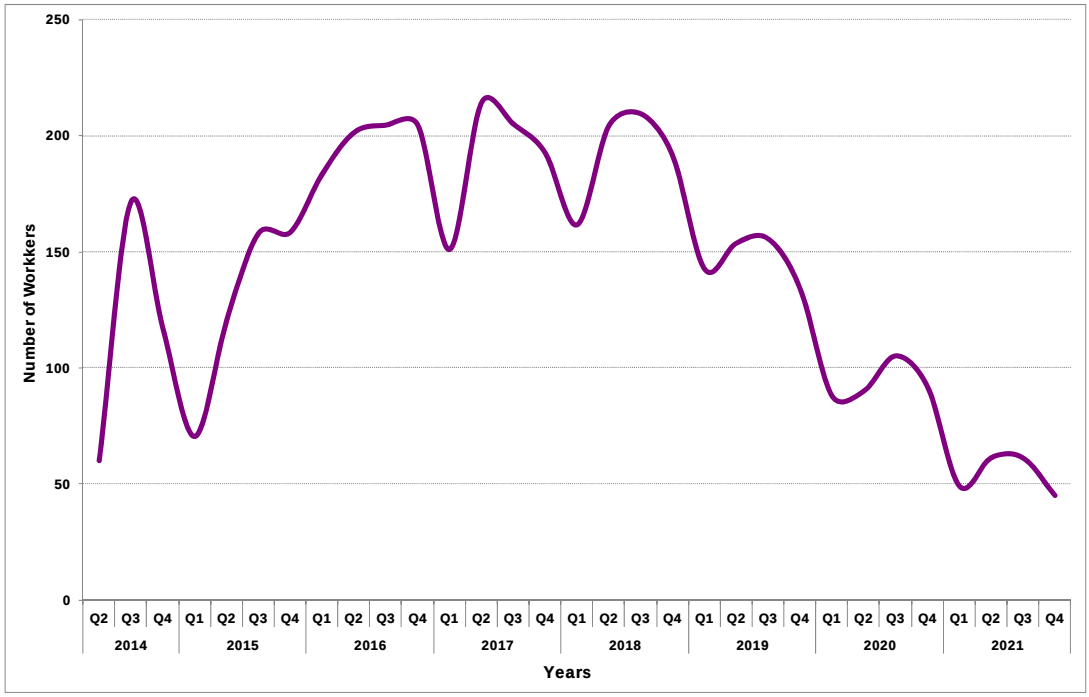
Source for the Demand: Derived from data provided by Manitoba Hydro in 2010.
Source for the Participation: Analysis prepared by InterGroup Consultants Ltd.
Note:
- Numbers are subject to rounding.

These percentages can be compared to that of the Wuskwatim Generation Project, under construction since 2006 and currently nearing completion. Like the Keeyask Generation Project, the Wuskwatim Generation Proejct construction occurred during and following the HNTEI initiative and followed the same preferential hiring provisions for northern Aboriginal workers. The construction phase has consisted of both infrastructure and major works. For a proper comparison of its employment results with the Keeyask Generation Project, only the major works construction can be considered. Construction of Wuskwatim

Generation Project major works resulted in 24% of its workforce being filled by Aboriginal workers from the Regional Study Area. This falls near the middle of the range of the Keeyask Generation Project estimates.

Aboriginal workers from the Regional Study Area (including KCNs and the CBN area) are expected to secure a high percentage of employment in the construction support (up to 88%) and non-designated trades (up to 56%) categories since there are a large number of Aboriginal workers who are qualified for these positions. A smaller proportion of designated trades and Manitoba Hydro and contract supervisory positions are likely to be filled by Aboriginal workers from the northern Region.

Figure 3-28 illustrates projected average quarterly peak employment for Aboriginal residents of the Regional Study Area.



Source: Analysis prepared by InterGroup Consultants Ltd.

Figure 3-28: Construction Phase Average Estimated Employment of the Regional Study Area Aboriginal Workforce in the Keeyask Generation Project

Employment of northern Aboriginal workers is estimated to vary between 45 and 215 workers over the construction phase. Comparing this to the average supply of northern Aboriginal workers, estimates from the employment analysis suggest that, on average, approximately 54% of those who have been identified as ready and qualified to work on the Project could gain employment. This would peak at 83% in the second quarter of 2017.

3.4.1.7.3 Mitigation

Mitigation for Regional Study Area employment includes taking the strategies described above for addressing the availability challenge and applying them to the Regional Study Area as well as tracking Aboriginal Regional Study Area employment as part of the SEMP.

3.4.1.8 Business Opportunities – Regional Study Area

There are no additional anticipated business opportunities related to construction in the Regional Study Area beyond those already discussed for the Local Study Area.

3.4.1.9 Income – Regional Study Area

Project construction will generate income from a number of sources including employment, business opportunities and payment of taxes. KCNs construction income will originate mainly from employment and to a lesser extent from business opportunities; while employment will be the main source of income for Aboriginal residents of the Regional Study Area.

As described earlier in this section, the BNA includes hiring preferences for Aboriginal workers from the CBN area and the Regional Study Area, according to the order set out in BNA Section 12.1.1.3. The following CBN and northern Aboriginal employment income estimates have been developed to illustrate the income effects of these hiring preferences.

All business income accruing to northern Aboriginal businesses is expected to result from DNCs with KCNs businesses. Tendered Contracts are typically not well-suited to the existing construction capacity in the Regional Study Area. Specifically, they usually require a large and very skilled labour force (beyond the capability of companies currently situated in the Regional Study Area). In addition, they typically require specialized equipment and experience that are not currently well developed in the Regional Study Area. Therefore, no Project business income is anticipated to accrue to northern Aboriginal businesses beyond the KCNs communities.

3.4.1.9.1 Employment Income - Churchill-Burntwood-Nelson Area

As a whole, Aboriginal workers from the CBN area, including KCNs Members, are expected to earn between $36 million and $128 million as a result of Project construction employment. Over half of this income is expected to result from DNCs, primarily from construction support employment. The remainder of employment income is expected to come from TCs, primarily through non-designated and designated trades.

In both the low and high employment estimates, more income is generated in the construction support category. Table 3-30 provides a summary of the income analysis results for the CBN area.

Table 3-30: Construction Phase Estimated Gross Employment Income Earned by the Churchill-Burntwood-Nelson Aboriginal Workforce (in millions of dollars)

CBN Region Income	High Employment Estimates			Low Employment Estimates[1]		
	All Contracts	DNC	TC	All Contracts	DNC	TC
Construction Support	51.0	41.2	9.8	12.1	11.7	0.4
Non-Designated Trades	43.8	18.1	25.7	8.4	6.2	2.2
Designated Trades	30.3	14.9	15.4	13.1	8.5	4.6
Subtotal	125.1	74.2	50.9	33.6	26.4	7.2
Manitoba Hydro And Contractor Supervisory	2.7			2.7		
Total	**127.8**			**36.3**		
Construction Support	41%	33%	8%	36%	35%	1%
Non-Designated Trades	35%	14%	21%	25%	18%	7%
Designated Trades	24%	12%	12%	39%	25%	14%
Total	**100%**	**59%**	**41%**	**100%**	**79%**	**21%**

Sources:
Workforce estimates provided by Manitoba Hydro in 2010.
Wage rates derived from BNA (Hydro Projects Management and Allied Hydro Council of Manitoba 2009).
Analysis prepared by InterGroup Consultants Ltd.
Note:
- Numbers do not always add due to rounding. Actual results will vary from estimates provided here.

The estimated effects of the hiring preferences for the CBN area outlined in the BNA for TCs, and the hiring preferences provided to KCNs Members within the CBN area for DNCs, can be seen by comparing total income estimates. The CBN area represents approximately one-third of the total northern Aboriginal population. Churchill-Burntwood-Nelson workers, however, are projected to earn 71%-75% of the total gross employment income anticipated to accrue to northern Aboriginal workers constructing the Project.

3.4.1.9.2 Employment Income – Regional Study Area

Aboriginal workers from the Regional Study Area, including all CBN workers, are estimated to earn between $49 million and $180 million in employment income during the construction phase. On average about 66% of this income is expected to be from employment under DNCs and about 34% from employment under TCs. Direct Negotiated Contract employment in both sets of estimates is expected to be focused in the construction support category, while employment under TCs is expected to be related more to non-designated and designated trades.

Table 3-31 provides a summary of estimated construction employment income for Aboriginal workers in the Regional Study Area as a whole.

Table 3-31: Construction Phase Estimated Gross Employment Income Earned by the Regional Study Area Aboriginal Workforce (in millions of dollars)

Regional Study Area Income	High Employment Estimates			Low Employment Estimates[1]		
	All Contracts	DNC	TC	All Contracts	DNC	TC
Construction Support	75.5	59.7	15.8	16.1	15.2	0.9
Non-Designated Trades	55.4	19.5	35.9	9.8	7.1	2.7
Designated Trades	41.0	16.9	24.1	14.4	8.6	5.8
Subtotal	171.9	96.1	75.8	40.3	30.9	9.4
Manitoba Hydro and Contractor Supervisory	8.2			8.2		
Total	**180.1**			**48.5**		
Construction Support	44%	35%	9%	40%	38%	2%
Non-Designated Trades	32%	11%	21%	24%	18%	7%
Designated Trades	24%	10%	14%	36%	21%	14%
Total	**100%**	**56%**	**44%**	**100%**	**77%**	**23%**

Sources:
Workforce estimates provided by Manitoba Hydro in 2010.
Wage rates derived from BNA (Hydro Projects Management and Allied Hydro Council of Manitoba 2009).
Analysis prepared by InterGroup Consultants Ltd.
Note:
- Numbers do not always add due to rounding. Actual results will vary from estimates provided here.

3.4.1.10 Cost of Living – Regional Study Area

There are no anticipated effects from the Project related to cost of living in the Regional Study Area.

3.4.1.11 Resource Economy – Regional Study Area

During the construction phase, Project effects related to the resource economy in the Regional Study Area are limited to effects on tourism (lodges and outfitters) and forestry within the Split Lake Resource Management Area. Effects are likely to result from shifting patterns of resource use due to the TCN AEA Offsetting Programs.

TOURISM, COMMERCIAL FORESTRY AND MINING

During Project construction, effects on tourism, specifically the lodges and outfitters sector of the resource economy, are likely to result from the increased wage economy (*e.g.*, challenges associated with hiring), presence of a large workforce and increased competition for resources. While construction is occurring, effects from shifting patterns of resource use due to AEA Offsetting Programs could also occur. In addition,

lodge owners and outfitters may experience reduced availability of qualified workers who seek alternate employment in Project construction. Since choices related to employment are at the discretion of the individual, no mitigation measures are recommended.

The TCN AEA Offsetting Programs, which would be occurring at the same time as Project construction, could potentially affect active lodge and outfitting activities within the Split Lake Resource Management Area as a result of shifting patterns of resource use by TCN participants. At times, these Offsetting Program areas are likely to coincide with areas in which lodges and outfitters operate. Effects, if and where experienced, are expected to be most noticeable in fall during moose hunting season and, to a lesser degree, in the spring. Changes in the patterns of resource use leading to reduced aesthetics of hunting and fishing experiences for clientele may reduce lodge operators' and outfitters' ability to attract new or retain current clients. TCN has adopted guidelines and principles for its Members when they are participating in the AEA Offsetting Programs. The guidelines and principles include respect for the land and environment. More specifically, they refer to leaving areas clean, respect for others and their property, and conducting selective harvesting which would consist of a consideration for the application of traditional and cultural values on all harvesting activities. Implementation of these guideline and principles should largely mitigate potential adverse effects on lodges and outfitters. A possible exception may be loss of customers who sense a loss of their 'wilderness experience' from increased activity in the area while they are using a lodge or outfitters services.

Increased competition for fish resources may occur in relation to the TCN Healthy Food Fish Program planned for lakes such as Waskaiowaka and Pelletier (among others) where a lodge business with an outcamp is in operation. The fish harvest sustainability plan is expected to manage this fishery sustainably to support the ongoing operation of the TCN Program. However, net fisheries and commercial sports fisheries are typically incompatible. Reductions in the abundance of large trophy fish would likely be noticeable to the Waskaiowaka and Pelletier lodge clientele if the designated harvest level is achieved from these lakes.

While forested areas will be cleared as part of the Reservoir Clearing Plan and for infrastructure requirements, this will have no immediate effect on the forest industry in Manitoba and will result in a very small reduction (738 ha/0.7%) of the productive forestland under forest management by the Province within Forest Management Unit 86. Loss in standing timber will be compensated for as per Manitoba Conservation's Forest Damage Appraisal and Valuation policy (2002). No further mitigation is required.

3.4.1.12 Economy of Canada and Manitoba

The following summarizes the provincial and national economic effects of the Project. Estimates of the Project's contribution to Gross Domestic Product, Project employment, labour income and government revenues are presented for the seven-year construction phase that begins in 2014. The information presented is based on an economic assessment carried out by Manitoba Hydro which relies heavily on analysis conducted by the Manitoba Bureau of Statistics using its national/provincial Economic Impact Assessment Model[1]. A copy of the economic assessment is presented in Appendix 3C.

Due to the capital intensive nature of hydroelectric projects, much of the provincial and national economic effects stemming from the Project are concentrated in the construction phase. It will be one of the largest

[1] Manitoba Hydro. Keeyask Generation Project: Economic Impact Assessment. Winnipeg, Manitoba. November 2011 (see Appendix 3C of SE SV).

construction projects in Canada when it is being built and the largest construction project undertaken in Manitoba since the Limestone Generating Station was built between 1985 and 1992. Construction of the Project will make a noticeable contribution to Manitoba's economy and be a prominent source of provincial economic activity.

The Project's estimated $2.2 billion in construction expenditures (in 2010 dollars without interest and escalation) is expected to generate the following provincial and national economic effects (in 2010 dollars):

- **Gross Domestic Product:** Spending on products, services and labour will contribute over $1.8 billion dollars to Canada's GDP from 2014 to 2021. Approximately 42% of this amount (about $755 million), will accrue in Manitoba, with the remaining $1 billion accruing in the rest of Canada.
- **Project Employment and Labour Income:** Construction of the Project will generate almost 21,600 person-years of direct, indirect and induced employment, and approximately $1.3 billion in labour income. This includes on-site construction jobs in northern Manitoba (2,460 person-years), off-site manufacturing, fabricating and transportation jobs in southern Manitoba and the rest of Canada as well as retail and service jobs resulting from expenditure of wages and salaries by project workers. A large share of the jobs and labour income will be in Manitoba, with nearly 8,370 person-years of employment (38%). The rest of Canada will benefit from over 13,000 person-years of added employment centered in the manufacturing and fabricating sectors.
- **Government Revenues:** Construction of the Project will generate sales, income and property tax revenues for the Federal, Provincial and local governments. Provincial governments will receive an estimated $328 million, nearly $182 million of which will flow to the Government of Manitoba. Local governments will receive an additional $60 million, with $25 million flowing to local governments in Manitoba. Over $362 million of Federal Government revenues will be generated. The Federal and Provincial governments will also benefit from reductions in social assistance and employment insurance payments where jobs are filled by people who would otherwise be unemployed. The magnitude of these savings has not been estimated.

No mitigation is required to derive these benefits. No additional monitoring is warranted.

3.4.1.13 Construction Monitoring

As noted in Chapter 8 of the Response to EIS Guidelines document, monitoring of socio-economic effects will be organized into a coordinated SEMP whose details will be developed after the Project has been filed. It will be part of a larger strategy to identify where the proposed approaches to conducting the Project and mitigating its effects may have to be adjusted in order to address observed Projects effects that do not align with what had been predicted. In relation to the economy, monitoring of construction effects is proposed for selected VECs.

3.4.1.13.1 Employment

Monitoring will be undertaken to determine the overall employment and training outcomes of Project construction with particular emphasis on Aboriginal and northern resident employment incomes. During construction, the following information will be tracked for Aboriginal, non-Aboriginal, CBN region, Northern Region and, Manitoba employees.

- Total construction opportunities available including the amount (*e.g.*, total person-years);
- Occupational classification of available opportunities; and
- Number of hires and total number of employees.

Both on-site construction employment and direct Project-related community based employment (*e.g.*, for community based job referral employment), would be covered.

Data will also be collected regularly on:

- Trainee status by on-site contractors and Manitoba Hydro, including information on trainee participation in HNTEI pre-Project training, trainee designation and apprenticeship level at the point of hire, at the point of separation and at any point during employment when reclassification occurs; and
- Factors associated with availability of workers and job qualification in a manner similar to construction of the Wuskwatim Generation Project.

If concerns with respect to employment are raised, they will be reviewed by the Advisory Group on Employment and if required internally by the Partnership, to determine whether and what form of adaptive management measures are appropriate.

3.4.1.13.2 Business Opportunities

Monitoring will occur to track business outcomes of Project construction, with a particular focus on KCN, Aboriginal and northern business participation. Monitoring will also attempt to understand any indirect business opportunities generated as a result of Project-related expenditures in Gillam, Thompson and the KCNs communities. This will be accomplished by tracking direct purchases made by the Partnership, in addition to undertaking a key person interview program in Thompson, Gillam and each of the KCNs communities at the peak of the General Civil Contract to ascertain any indirect business opportunities generated as a result of the Project.

Monitoring will also try to understand the role of KCNs businesses in implementing the DNCs and how the DNCs contribute to building KCNs business capacity. Monitoring will include a key person interview program with the main participants involved in managing the DNCs. Further to this, it will identify non-Keeyask contracts secured by joint ventures that perform DNC contracts.

3.4.1.13.3 Income

Monitoring will determine the levels of employment income generated by Project construction, and will include KCNs and CBN region employees. Monitoring will estimate the total labour income generated by the Project based on the total person-years of employment generated and applicable wage rates from the BNA. Labour income will be broken down by KCNs, CBN region, Aboriginal, non-Aboriginal, and northern Manitoban employees.

3.4.2 Operation Effects and Mitigation

Economic benefits of the operation phase to the Regional Study Area would be concentrated in the Local Study Area and would flow mainly from three sources:

- Manitoba Hydro operation employment opportunities based in Gillam – 46 operating jobs are expected to be created as a result of the Project;
- Operation employment opportunities with Manitoba Hydro created by commitments in the JKDA: the JKDA established 20-year targets for employment by Manitoba Hydro of KCNs Members across Manitoba Hydro's entire system, not just for the Keeyask Generation Project; and
- Revenue earned by the KCNs partner communities through their equity ownership in the Project.

Direct business benefits are expected to be small.

3.4.2.1 Employment Opportunities – Local Study Area

The effects of operation phase employment and training opportunities within the Local Study Area are presented separately for KCNs, Gillam and Thompson.

3.4.2.1.1 Keeyask Cree Nations

KCNs Members are expected to benefit from job opportunities that flow from Section 12.7.1 of the JKDA. This section established a 20-year target for the employment of KCNs Members in Manitoba Hydro operation and maintenance jobs. Within this 20-year timeframe, Manitoba Hydro and KCNs intend to work together, through a working group on operation jobs, to develop strategies to achieve this goal and to review and adjust these targets. The working group would make use of Manitoba Hydro employment forecasts and known KCNs labour supply data to undertake this review. Target employment levels established in the JKDA are 100 TCN Members, 10 WLFN Members, 36 YFFN Members and 36 FLCN Members by 2029. The target level of employment for all four KCNs communities is 182 jobs. These levels of employment in long-term, well-paying jobs would generate substantial benefits for each First Nation: specifically, by providing valuable full-time employment opportunities for their rapidly growing labour force, and contributing noticeably to lowering their unemployment levels.

Some of the positions filled pursuant to the JKDA operation employment provisions could include Project operation jobs.

3.4.2.1.2 Gillam

Table 3-32 identifies the Project employment positions anticipated to be required for the operation phase. These 46 full-time, high-paying positions would be based in Gillam. None are expected to be based in other Local Study Area communities. Project operation jobs would increase the current complement of full-time Manitoba Hydro employees in the community by about 13%, adding noticeably to Gillam's economic base. These jobs would be filled through Manitoba Hydro's standard hiring procedures. Most of the workers required to fill these operating positions are expected to come from outside of Gillam, since most of the qualified residents in Gillam are already employed by Manitoba Hydro. Some of the operation jobs may also be filled by KCNs Members. Qualified TCN Members living in Split Lake and FLCN Members living in

Gillam and Fox Lake (Bird) and are the most likely KCNs Members to fill Project operation jobs due to their close proximity to where the jobs are to be based.

Table 3-32: Estimated Operation and Maintenance Staff Requirements for the Keeyask Generation Project

Keeyask Site Staff	**37**
Power Supply Worker Journeyman (Electrical)	9
Power Supply Worker Journeyman (Mechanical)	9
Senior Power Supply Worker (Electrical)	1
Senior Power Supply Worker (Mechanical)	1
Maintenance Planner	1
Administrative Rep	1
Utility Workers	3
Senior Utility Worker	1
Storekeepers	1
Welder	1
Manager	1
Electrical/Operating Supervisor	1
Mechanical/Operating Supervisor	1
Power Supply Worker Trainees	6
Gillam Support Staff	**9**
Gillam Services Tradesperson (carpenter/plumber, etc)	2
Technical Services Engineers (Electrical and Mechanical)	2
Other, such as equivalent for Safety Officer, Human Resource, Admin, Finance, IT, protection/Telecontrol	5
TOTAL	**46**

Source: Data provided by Manitoba Hydro in 2009.

FLCN and Manitoba Hydro staff based in Gillam are working together to develop strategies and plans for increasing the participation of FLCN Members in Manitoba Hydro jobs based in Gillam which includes the Project and other work with Manitoba Hydro located in the vicinity of Gillam (FLCN KPI Program 2009-2010). Particular attention is being directed at assisting youth in Gillam, including FLCN members, who are currently in the school system to participate in Manitoba Hydro opportunities.

The addition of Project workers and their families would increase the population of Gillam and add to the requirement for retail and public sector services. This could create a small number of additional part-time and full-time jobs in these sectors.

3.4.2.1.3 Thompson

No direct employment effects on Thompson are expected as a result of Project operation. The increased population of Gillam would likely access the retail and hospitality services available in Thompson. Although the overall resulting economic effects are expected to be small, the effect on job creation in Thompson would be even smaller.

3.4.2.1.4 Mitigation

No mitigation measures are required.

3.4.2.2 Business Opportunities – Local Study Area

Three main business opportunities would result from the operation phase of the Project:

- Local participation by KCNs communities in the ownership of the Keeyask Project;
- Participation in contracts required to maintain the Project site (*e.g.,* snow clearing); and
- Increased business activity in Gillam where the Project's operation workforce would be based.

3.4.2.2.1 Keeyask Cree Nations

The KCNs, with Manitoba Hydro, have established a limited partnership that is responsible for planning, design, ownership, construction, operation and maintenance of the Project. Each of the KCNs partners will receive ongoing income relative to their equity investment in the Project and according to the terms of the JKDA.

JKDA Section 14.2.2 Permitted Uses states that "distributions referred to in subsection 14.2.1 may be used by a Keeyask Cree Nation for a variety of purposes including business and employment development" (CNP *et al.* 2009). This indicates that some of the income generated by the investment in the Project could be used by each of the KCNs to facilitate development of new business capacity and opportunities for their Members. Beyond this general indication, however, the direction and scale of new business opportunities are not known at this time. For each of the KCNs, future business plans will depend upon the amount of equity income available, as well as the intentions and circumstances of each KCNs and their Members. Ongoing purchases of goods and materials for Project operation and maintenance will likely result in modest opportunities for KCNs businesses, *e.g.* snow clearing contracts.

3.4.2.2.2 Gillam

During the operation phase, business opportunities in Gillam will result from the added population growth in the community, spurred by Project operation workers and their families being located in Gillam. An estimated 46 workers will be required by Manitoba Hydro to operate the facility, adding about 13% to the existing 350 Manitoba Hydro employees currently working in Gillam. With the addition of workers' families, as well as the indirect employment resulting from the Project, Gillam's population could increase by 120 to 150 people. This would represent an increase to the community's population of about 10%. Population projections for Gillam are found in Section 4.2.1.3 for the operation phase.

This increased population may enlarge the market for existing retail and consumer services in Gillam, enhancing their viability and purchasing power and possibly leading to a wider selection of products being made available to Gillam residents. The increased business activity in the operation phase may help to

counter-balance the boom-bust nature of development projects by extending business activity beyond the construction phase.

Ongoing purchases of goods and materials for Project operation and maintenance will likely result in modest opportunities for KCNs and Gillam businesses, *e.g.* snow clearing contracts.

3.4.2.2.3 Thompson

During the operation phase, following the decline in activity due to completion of Project construction, Thompson is likely to experience some increased business activity as a result of new Project operation employment in Gillam and employment and equity income flowing to the KCNs communities. At this juncture, it is not known how new income in the KCNs communities would be utilized or distributed. However, KCNs communities have described the importance of Thompson businesses and services to their Members. If the new, Project-related population in Gillam and past experiences of the KCNs communities follows existing trends, extra income could be spent in Thompson for entertainment, groceries, household goods and other items. While not quantifiable, the overall effect on Thompson businesses from this increased spending is expected to be small relative to the overall Thompson economy.

Ongoing purchases of goods and materials for Project operation and maintenance will likely result in modest opportunities for KCNs, Thompson and Gillam businesses, *e.g.* snow clearing contracts.

3.4.2.2.4 Mitigation

No mitigation or enhancement is required.

3.4.2.3 Income – Local Study Area

Two main income effects are expected to result from the Project in the Local Study Area during the operation phase; they are as follows:

- Income to KCNs Members from Manitoba Hydro and Keeyask operation jobs; and
- Income to each of the KCNs from Project profits accruing to the KCNs based on their investment in the Project.

A discussion about these effects is provided for the KCNs, Gillam and Thompson.

3.4.2.3.1 Keeyask Cree Nations Income

EMPLOYMENT INCOME

The operation jobs filled by KCNs Members through Section 12.7.1 of the JKDA would generate substantial employment income for these Members. These jobs would occur throughout Manitoba Hydro's operations, including operation of the Project. Table 3-33 provides a summary of the 20-year employment targets for each of the KCNs communities (as outlined in Section 12.7.1 of the JKDA) and the potential gross income that could be realized when these targets are reached. Income from Project operation jobs is included in these amounts.

Table 3-33: Estimated Annual Gross Income for Keeyask Cree Nations Members When 20-Year Operation Employment Targets Are Achieved (Million $)

KCNs Community	Manitoba Hydro 20-year Employment Target	Potential Annual Gross Income [1,2]	Potential Annual Net Income [1,2]
TCN	100 positions	10.8	7.4
WLFN	10 positions	1.1	.7
FLCN	36 positions	3.9	2.6
YFFN	36 positions	3.9	2.6

Source: JKDA, Section 12.7.1 (CNP *et al.* 2009)
Note:
1. Actual results will vary from estimates provided here.
2. Expected gross salary per position is provided by Manitoba Hydro, 2011 and assumed to be $108,157 per year in 2010 dollars. Net Income is calculated based on Canada Revenue Agency's Payroll Deductions Table effective July 1, 2011 for Manitoba.

INVESTMENT INCOME

Under the JKDA, KCNs communities have the option of acquiring up to 25% equity in the Project. Of this total, the CNP has the opportunity to acquire up to 15% equity in the Project, while FLCN and YFFN each have the opportunity to acquire up to 5%.

Each of the KCNs communities would eventually receive income based on their investment in the Project. Dividends will begin to accrue after the Project becomes operational and produces revenues. KCNs communities can choose to invest in the Project in one of two ways: 1) a common equity option, which requires a higher level of investment and generates a proportionate share of distributions from the Project based on Partnership financial performance, or 2) a preferred equity option. The latter option involves a lower investment and a guaranteed return on investment. In the long-term, annual dividends could provide substantial long-term, sustainable income for the community.

The distribution of annual Project dividends is expected to increase the amount of discretionary income the KCNs have to address economic, infrastructure and social needs. This may contribute to improve socio-economic circumstances for the KCNs. Section 14.2.2 of the JKDA indicates that distributions may be used by a KCNs community for the following purposes:

- Resource rehabilitation and development measures to support increased viability for traditional and commercial resource pursuits and other resource harvesting;
- Initiatives to support its Aboriginal or treaty rights;
- Cultural support and social development initiatives;
- Business and employment development undertakings;
- Local community infrastructure and housing development;
- The construction of capital projects, including related infrastructure, as well as the operation and maintenance of any capital projects, including related infrastructure; and

- Technical and legal services related to its business and other affairs.

3.4.2.3.2 Gillam

Project income effects during the operation phase will be primarily related to the employment increases identified in Section 3.4.2.1. Project employment during the operation phase will be year round. While employment will occur both at the Keeyask work site and in Gillam, all new employees related to the operation phase would be expected to live in Gillam. Table 3-34 identifies potential annual net and gross income from Project operating jobs based in Gillam. Gross income for Gillam-based employees employed during the Keeyask operation phase is expected to be in the order of $5 million gross and $3.4 million net of income taxes. As well, some indirect income would to be generated as a result of expenditure of the KCNs investment income and local spending of income from operations jobs.

Table 3-34: Increase in Annual Gross and Net Employment Income in Gillam during Operation

	Net Income	Gross Income[1,2]
Income	$3,383,985	$4,975,218

Analysis by InterGroup Consultants Ltd.
Notes:
1. Actual results will vary from estimates provided here.
2. Expected gross salary per position is provided by Manitoba Hydro, 2011 and assumed to be $108,157 per year in 2010 dollars. Net Income is calculated based on Canada Revenue Agency's Payroll Deductions Table effective July 1, 2011 for Manitoba.

3.4.2.3.3 Thompson

Some indirect income would be generated in Thompson as a result of the increased KCNs equity income and the increased employment income expected in Gillam. This equity and employment income could result in additional employment and business income, primarily at retail businesses in Thompson. Estimates regarding this income could not be determined for this analysis.

3.4.2.3.4 Mitigation

No mitigation or enhancement is required.

3.4.2.4 Cost of Living – Local Study Area

There are two potential sources of effect during the operation phase of the Project. First, the Project will increase the number of people required for Manitoba Hydro's northern operations. This will increase employment income in Gillam, with a corresponding increase in related economic activity. Second, Manitoba Hydro has committed to hiring targets for KCNs residents, as outlined in the JKDA. As noted above, this commitment to operation job targets for the KCNs applies across Manitoba Hydro's entire operational area and is not limited to the Project.

3.4.2.4.1 Keeyask Cree Nations

Since Manitoba Hydro's hiring targets apply across Manitoba Hydro's entire operations, no effect on the cost of living in KCNs communities is expected. Keeyask Cree Nations workers who participate in these operation jobs could return a small amount of their employment income to family members living in KCNs

communities, but it is unlikely that there would be enough increased income to create any tangible effect on cost of living.

3.4.2.4.2 Gillam

Project operation is expected to increase long-term employment in Gillam.

The related potential for local spending of employee income may improve the selection of food and household items available in the community and, due to the sustained nature of these jobs, could result in expansion of existing businesses or new business creation. The planned new mall could be in place by the time Project operation begins, providing added capacity to accommodate the increase in local spending from operation workers. Nevertheless, local prices are unlikely to be pressured downward due to limited competition.

Local labour costs may contribute to upward pressure on prices. However, additional available workers in the Gillam area would likely be able to handle increases in activity in the retail and consumer service sectors, especially among the families of Manitoba Hydro employees and FLCN Members.

Housing costs are not expected to be affected by the Project. Manitoba Hydro is expected to build new homes in Gillam in anticipation of operation employment increases. These homes would be available to new Project employees at the same subsidized rates as other Manitoba Hydro homes in Gillam.

3.4.2.4.3 Thompson

No Project-related cost of living effects are anticipated in Thompson during the operation phase. Related spending in Thompson due to an increase in Gillam employment is not expected to be large enough to affect the local economy. Keeyask Cree Nations employment income resulting from Project-related employment targets is expected to occur across the Province and is expected to have little effect on the Thompson economy.

3.4.2.4.4 Mitigation

No mitigation or enhancement is required.

3.4.2.5 Resource Economy – Local Study Area

Project effects on the resource economy during the operation phase could result from the following: (identified in the Resource Use Section of the SE SV):

- Loss of habitat and access due to raising of water levels and the creation of the reservoir;
- Shifting patterns of resource use through the KCNs AEA Offsetting Programs;
- Increased mercury levels in fish;
- Changes in access due to operation of the north and south access roads; and
- Income generated by KCNs investment in the Project.

Similar to the construction phase, the effects during the operation phase identified are expected to have limited consequences on cash and in-kind income and livelihood related to all resources use sectors.

With regard to the income generated by KCNs ownership participation, it is reasonable to anticipate that some portion of this income may be directed to promoting and protecting traditional resource harvesting activities, thereby enhancing their importance in the local economy and contributing to community self-sufficiency. If investments were used to enhance traditional and commercial resource harvesting, positive effects on the resource economy likely would result. Project effects through increased investment income could therefore bring about positive and long-term change in the resource economy in general. However, anticipating how this income could be distributed across various activities cannot be predicted.

Effects on commercial forestry are expected to be negligible; and the effects on mining are expected to be positive due to increased access for future exploration.

3.4.2.5.1 Commercial Resource Economy

COMMERCIAL TRAPPING

During Project operation, effects on the commercial trapping sector of the resource economy would likely result from loss of terrestrial and aquatic habitat and increased access.

Several aspects of Project operation, primarily related to terrestrial and aquatic habitat change, could potentially have an effect on the viability of commercial trapping in the local area. This includes the nature and magnitude of flooding, as well as road access.

In the case of Trapline 15, approximately 4.5% (or 42 km^2) of the total area of 950 km^2 will be flooded. This will increase to just over 5% due to reservoir expansion over 30 years. Trapline 9 will not be affected by flooding, but will contain about 12 km of the new south access road. Trapline 7 is expected to experience just over 1% cent flooding (or just under two km^2). Trapline 25 is expected to experience flooding to less than 1% of its land. During operation, the north and south access roads are expected to form part of the provincial highway system. Increased traffic associated with the highway could potentially lead to wildlife disturbance on Traplines 15 and 9.

To mitigate adverse effects, Manitoba Hydro expects to have Trapline agreements in place for all affected Traplines including 7, 9 and 15. Minor effects to Trapline 25, a TCN community line, will be treated differently (see Resource Use section of the SE SV).

Increased road access may also contribute to the economic viability of Traplines 15 and 9 by providing safe and cost-effective access to areas that were previously not accessible (*e.g.*, portion of Trapline 15 south of the Nelson River, western half of Trapline 9). This improved accessibility would be expected to increase productivity on these two traplines, thus having the potential to increase the resource economy related to commercial trapping.

COMMERCIAL FISHING

The primary Project effect on commercial fishing, as a result of the operation phase, will be the increased mercury concentrations post-impoundment.

Although there is no existing commercial fishery on Gull Lake, increased levels of mercury will preclude the opportunity for any such fishery to be established for approximately 30 years post-impoundment, due to an increase in the levels of mercury in fish.

In Stephens Lake (the location of a small-scale, single licence fishery with authorization for local sale of fish), the mean standardized mercury level for pickerel (the primary target species of the fishery) is expected to increase to just under 0.5 ppm, which corresponds to the upper limit set by Health Canada for retail fish sales. Since the sale of pickerel from Stephens Lake is typically directed towards local retailers and consumers (rather than through the Freshwater Fish Marketing Corporation), standard testing by the Canadian Food Inspection Agency for mercury is not likely to take place (see Resource Use Section).

As discussed under construction phase mitigation, the Stephens Lake fishery is expected to be discontinued by agreement with the operator.

TOURISM, COMMERICAL FORESTRY AND MINING

Potential Project effects during the operation phase on tourism (lodges and outfitters) are mainly covered under the Regional Study Area, Section 3.4.1.11. For businesses based in Gillam, access will be improved (travel time from Thompson will be reduced) as a result of re-routing of PR 280 along the south access road, across the generating station and along the north access road, potentially leading to an increased client base. However, since most clients tend to be from the United States, these effects are not expected to be substantial.

Project-specific residual effects on forestry resources are negligible. Where timber is salvaged and utilized, positive environmental and economic effects are anticipated (see Resource Use Section).

Project operation effects on mining activities in the Local Study Area are expected to be positive (due to improved access). The access roads could potentially result in increased mineral exploration activity in the Local Study Area (see Resource Use Section).

3.4.2.5.2 Mitigation

No mitigation is proposed.

3.4.2.6 Resource Economy – Regional Study Area

Project operations are not expected to create noticeable effects on the resource economy outside of the Local Study Area. TCN's AEA Access Program is being implemented using TCN's principles and guidelines for users of the Access Program. This should limit long-term, Project operation effects on lodges and outfitters. No further mitigation is required.

3.4.2.7 Economy of Canada and Manitoba

Similar estimates are also provided for a typical operation phase year, which would begin in 2019.

The Keeyask Generating Station has a design life of at least 60 years. Operating and maintenance activities will be quite similar from year to year except for those few years when repair or rehabilitation needs to be carried out. A typical year's expenditure will be about $5.7 million including water rental accruing each year to the Manitoba Government. This accounts for nearly 90% of this amount. These expenditures will generate the following annual economic effects (in 2010 dollars) when the Project is operating in a typical manner.

- **Gross Domestic Product:** Operation of the Project will generate an estimated $6.9 million of Gross Domestic Product in Manitoba, and just over $0.7 million in the rest of Canada. The high concentration

in Manitoba is due to the high proportion of total expenditures accounted for by water rentals paid to the Manitoba Government.

- **Project Employment and Labour Income:** Only a relatively small number of people will be required to operate and maintain the generating station. About 91 person-years of direct, indirect and induced employment will be generated in a typical year of Project operation, 76 of which will occur in Manitoba and 15 of which will occur in the Rest of Canada. Labour income will amount to $6 million in Manitoba and $0.4 million in the Rest of Canada.
- **Government Revenues:** Government revenues will largely be concentrated in Manitoba where the Provincial Government will receive almost $29.4 million each year, comprised largely of water rentals. Federal revenues will be approximately $1.2 annually.

These benefits will be generated in the absence of any further mitigation. No additional monitoring is warranted.

3.4.2.8 Operation Monitoring

No monitoring is proposed.

3.4.3 Summary of Residual Project Effects

3.4.3.1 Summary of Construction Effects

Table 3-35 provides a summary of expected Project construction effects, high-level mitigation and monitoring identified to address those effects, assessment characteristics used (magnitude, geographic extent and duration) and the residual effects (after mitigation) pertaining to the Socio-Economic Local and Regional study areas (where applicable).

Table 3-35: Construction Effects on Economy

Potential Socio-Economic Effect	Mitigation Measures, Monitoring and Follow-up	Residual Socio-Economic Effect	Assessment Characteristics
EMPLOYMENT (Keeyask Cree Nations, Gillam, Thompson, CBN, Northern Aboriginal)			
Project includes substantial increased employment throughout construction phase, particularly through DNCs for the KCNs	No mitigation required as best practices in place through BNA and JKDA Enhancements include strategies to enhance participation of northern Aboriginal workers to work on construction jobs, particularly availability-oriented measures Monitoring of employment hires and job type and trainee status for Aboriginal, non-Aboriginal, northern, Manitoba and CBN region as part of SEMP	Increased employment	Direction: Positive Magnitude: Moderate Geographic Extent: Medium Duration: Short-term

Table 3-35: Construction Effects on Economy

Potential Socio-Economic Effect	Mitigation Measures, Monitoring and Follow-up	Residual Socio-Economic Effect	Assessment Characteristics
BUSINESS OPPORTUNITIES (Keeyask Cree Nations)			
Increased business opportunities and community capacity	None required Opportunities for KCNs involvement through DNCs in place Monitoring to track outcomes, expenditures, and role of DNCs	Increased business opportunities and community capacity	Direction: Positive Magnitude: Moderate Geographic Extent: Medium Duration: Short-term
Increased business revenue	None required	Increased business revenue, capital	Direction: Positive Magnitude: Moderate Geographic Extent: Medium Duration: Short-term
Expansion of business network	None required	Expansion of business network	Direction: Positive Magnitude: Moderate Geographic Extent: Medium Duration: Short-term

Table 3-35: Construction Effects on Economy

Potential Socio-Economic Effect	Mitigation Measures, Monitoring and Follow-up	Residual Socio-Economic Effect	Assessment Characteristics
BUSINESS OPPORTUNITIES (Gillam)			
Increased business opportunities	None required Enhancement includes the maintenance of communication with organizations on opportunities through Manitoba Hydro's Northern Purchasing Policy Monitoring of Project-related expenditures in Gillam through KPI program and business survey	Increased business opportunities for new and existing local businesses	Direction: Positive Magnitude: Small to Moderate Geographic Extent: Medium Duration: Short-term
BUSINESS OPPORTUNITIES (Thompson)			
Increased business opportunities	Maintain communication with organizations in City of Thompson on opportunities through Manitoba Hydro's Northern Purchasing Policy	Increased opportunities and revenue for existing local businesses	Direction: Positive Magnitude: Small to Moderate Geographic Extent: Medium Duration: Short-term

Table 3-35: Construction Effects on Economy

Potential Socio-Economic Effect	Mitigation Measures, Monitoring and Follow-up	Residual Socio-Economic Effect	Assessment Characteristics
INCOME (Keeyask Cree Nations)			
Increased employment income	None required Monitoring of labour income generated as part of SEMP	Increased employment income	Direction: Positive Magnitude: Moderate to Large Geographic Extent: Medium Duration: Short-term
Increased business income	None required KPIs with key participants in managing the DNCs	Increased capacity of local business	Direction: Positive Magnitude: Moderate to Large Geographic Extent: Medium Duration: Short-term
INCOME (Gillam, Thompson)			
Increased employment income	None required Monitoring of labour income generated as part of SEMP	Increased employment income	Direction: Positive Magnitude: Small to Moderate Geographic Extent: Small to Medium Duration: Short-term
Increased business income	None required	Increased business income	Direction: Positive Magnitude: Small to Moderate Geographic Extent: Small to Medium Duration: Short-term

Table 3-35: Construction Effects on Economy

Potential Socio-Economic Effect	Mitigation Measures, Monitoring and Follow-up	Residual Socio-Economic Effect	Assessment Characteristics
INCOME (Regional Study Area)			
Increased employment income	None required Monitoring of labour income generated as part of SEMP (breakdown labour income by KCNs, CBN region, Aboriginal, non-Aboriginal, northern and Manitoban)	Increased employment income	Direction: Positive Magnitude: Small to Moderate Geographic Extent: Large Duration: Short-term
COST OF LIVING (Keeyask Cree Nations, Gillam, Thompson)			
Little tangible effect that can be attributed to the Project	None required	Little tangible effect	Direction: Neutral
RESOURCE ECONOMY – Commercial Trapping			
Decreased harvest and associated income	Settlements with trappers for loss of income No monitoring intended	No net effect	Direction: Neutral
RESOURCE ECONOMY – Commercial Fishing			
Decreased harvest and associated income	Settlement with business for closure of fishing business No monitoring intended	No net effect	Direction: Neutral

Table 3-35: Construction Effects on Economy

Potential Socio-Economic Effect	Mitigation Measures, Monitoring and Follow-up	Residual Socio-Economic Effect	Assessment Characteristics
RESOURCE ECONOMY – Tourism, Commercial Forestry and Mining			
Potential disturbance of certain lodges and outfitters	Implementation of TCN's guidelines and principles for their Access Program Fish Harvest Sustainability Plan	Disturbance of certain lodges and outfitters	Direction: Neutral
Loss of forestland for Project infrastructure	Compensation will be provided	Negligible loss	Direction: Negligible
No effects on commercial mining	None required	No effect	No effect
ECONOMY OF CANADA AND MANITOBA			
Increased level of economic activity	None required	Increased employment, employment income, GDP and government revenues	Direction: Positive Magnitude: Moderate Geographic Extent: Large (*i.e.,* Manitoba and Canada) Duration: Short-term

Notes:
Direction: Positive, Neutral , Adverse
Magnitude: Small, Moderate, Large
Geographic Extent: Small, Medium, Large
Duration: Short-term, Medium-term, Long-term

In summary, residual effects of the Project after mitigation on employment, opportunities in the construction phase are expected to be positive due to increased employment opportunities, medium to large in geographic extent, of short-term duration and of moderate magnitude. KCNs workers are projected to account for between 6% and 14% of the total construction workforce. The full extent will depend on the uptake of employment opportunities. Monitoring will be undertaken to track employment opportunities, trainee status, factors associated with employment challenges and other information.

Residual effects of the Project after mitigation on business opportunities are also expected to be positive, small to moderate in magnitude, medium in geographic extent and short-term. This is due to increased business opportunities (including KCNs DNCs) and resulting enhanced community capacity, business revenue and business networks. Monitoring will track business opportunities, DNC involvement, expenditures and other information.

Residual effects of the Project after mitigation on income are expected to be positive, small to large (depending on the group) in magnitude, small to medium in geographic extent, and short-term. This would result from increases in employment and business income. Monitoring of labour income generated will take place.

Residual effects of the Project after mitigation on cost of living are expected to be neutral for the KCNs, Gillam and Thompson.

Residual effects of the Project after mitigation on commercial trapping are expected to be neutral after taking into consideration compensation to trappers. The Stephens Lake fishery is expected to be closed by agreement with the operator, including compensation provided to the business. Residual effects of the Project after mitigation on tourism (lodges and outfitters specifically) are expected to be neutral. Residual effects on commercial forestry are expected to be negligible; and there are no expected residual effects on mining.

3.4.3.2 Summary of Operation Effects

Table 3-36 provides a summary of expected Project operation effects, high-level mitigation and monitoring identified to address those effects, assessment characteristics used (*e.g.*, magnitude, geographic extent and duration) and the residual effects (after mitigation) pertaining to the socio-economic Local and Regional Study Areas (where applicable).

Table 3-36: Operation Effects on Economy

Potential Socio-Economic Effect	Mitigation Measures, Monitoring and Follow-up	Residual Socio-Economic Effect	Assessment Characteristics
TRAINING AND EMPLOYMENT (Keeyask Cree Nations)			
Increased employment opportunities – both Project operation jobs and system-wide opportunities	None required JKDA targets for Manitoba Hydro operations employment for KCNs. Monitoring through the SEMP	Increased employment	Direction: Positive Magnitude: Moderate Geographic Extent: Medium to Large Duration: Long-term
TRAINING AND EMPLOYMENT (Gillam, Thompson)			
Increased employment opportunities	None required	Increased employment	Direction: Positive Magnitude: Moderate Geographic Extent: Medium Duration: Long-term
BUSINESS OPPORTUNITIES (Keeyask Cree Nations)			
Increased opportunities for KCNs businesses (*e.g.,* snow clearing)	None required Monitoring through the SEMP	Increased opportunities for KCNs businesses Increased community capacity to start and manage businesses	Direction: Positive Magnitude: Small to Moderate Geographic Extent: Medium Duration: Long-term

Table 3-36: Operation Effects on Economy

Potential Socio-Economic Effect	Mitigation Measures, Monitoring and Follow-up	Residual Socio-Economic Effect	Assessment Characteristics
BUSINESS OPPORTUNITIES (Gillam)			
Increased business opportunities	None required	Increased business opportunities, with wider selection of goods and services, increase in variety of businesses	Direction: Positive Magnitude: Small to Moderate Geographic Extent: Small Duration: Long-term
INCOME (Keeyask Cree Nations)			
Increased employment income through long-term employment opportunities	None required Monitoring through SEMP	Increased employment income	Direction: Positive Magnitude: Moderate to Large Geographic Extent: Medium to Large Duration: Long-term
INCOME (Gillam, Thompson)			
Increased employment income	None required	Potential for increased local spending	Direction: Positive Magnitude: Small to Moderate Geographic Extent: Small to Medium Duration: Long-term
COST OF LIVING			
No effect	None required	No effect	No effect

Table 3-36: Operation Effects on Economy

Potential Socio-Economic Effect	Mitigation Measures, Monitoring and Follow-up	Residual Socio-Economic Effect	Assessment Characteristics
RESOURCE ECONOMY – Commercial Trapping and Fishing			
Commercial resource use loss	Settlements with resource users No monitoring intended	No residual effect	Direction: Neutral
RESOURCE ECONOMY – Tourism, Commercial Forestry and Mining			
Potential disturbance of certain lodges and outfitters	Implementation of TCN's guidelines and principles for AEA Access Program participants	Disturbance of certain lodges and outfitters	Direction: Adverse Magnitude: Small Geographic Extent: Medium Duration: Long-term
Improved access for mineral exploration via the new access roads	None required	Improved access	Direction: Positive Magnitude: Small Geographic Extent: Medium Duration: Long-term
Permanent loss of forestland (negligible)	Compensation for loss of standing timber	Loss in forestland	Direction: Negligible

Table 3-36: Operation Effects on Economy

Potential Socio-Economic Effect	Mitigation Measures, Monitoring and Follow-up	Residual Socio-Economic Effect	Assessment Characteristics
ECONOMY OF CANADA AND MANITOBA			
Increased level of economic activity	None required	Increased employment, employment income, GDP and government revenues	Direction: Positive Magnitude: Small Geographic Extent: Large (*i.e.,* Manitoba and Canada) Duration: Long-term

Notes:
Direction: Positive, Neutral , Adverse
Magnitude: Small, Moderate, Large
Geographic Extent: Small, Medium, Large
Duration: Short-term, Medium-term, Long-term

In summary, residual effects of the Project (during operation) after mitigation on employment opportunities are expected to be positive, moderate in duration, small to large in geographic extent (due to system-wide employment opportunities for the KCNs) and long-term. Provisions in the JKDA provide for the opportunity for KCNs Members employment in 182 operation positions across Manitoba Hydro's system. The Project is expected to require 46 full-time, well-paying operation positions based in Gillam.

Residual effects of the Project after mitigation on business opportunities (for KCNs, Gillam and Thompson) are expected to be positive, small to moderate in magnitude, small to medium in geographic extent and long-term. These residual effects include increased business opportunities and community capacity to develop, manage and potentially expand businesses. In Thompson, residual effects are likely to be very small, resulting from re-spending of employment income within the City.

Income effects would result from KCNs Members participating in Manitoba Hydro system-wide jobs and Keeyask operation jobs. KCNs communities will also receive income based on their investment in the Project. As such, likely residual effects of Project operation on KCNs income are expected to be positive, medium to large in geographic extent (due to system-wide employment opportunities), of long-term duration and moderate to large in magnitude. Residual effects related to income in Gillam and Thompson are expected to be positive, small to medium in geographic extent, long-term and small to moderate in magnitude.

There are no anticipated residual effects of the Project on cost of living in the KCNs communities, Gillam, Thompson and the rest of the Regional Study Area.

Effects on resource economy during the operation phase are expected to have limited consequences on cash and in-kind income and livelihood related to all resource use sectors. Therefore, the likely residual effects are expected to be neutral (domestic and commercial resource use losses are to be compensated); residual effects on tourism are expected to be adverse; those on commercial forestry are expected to be negligible; and there are positive residual effects on mining due to improved access. In the adverse effects on tourism, these effects are expected to be small in magnitude, medium in geographic extent, and of long-term duration.

APPENDIX 3A
SUPPLEMENTARY DATA TABLES

KEEYASK
Hydropower Limited Partnership

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LIST OF TABLES

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3A.0 INTRODUCTION

This appendix serves as a repository for more comprehensive data sets than those presented in Section 3. These tables include the complete dataset for tables that may have been abridged within the main volume, or in some cases have been presented as summary charts. Key topics (for KCNs, Northern Region, Thompson and Gillam) include:

- Labour force;
- Employment, participation and unemployment;
- Education;
- Employment skills by job category;
- Occupational classification;
- Income; and
- Cost of living.

Table 3A-1: Labour Force in KCNs Communities (1991, 2001, 2006)

Characteristics[1]	KCNs Members[2]		WLFN and YFFN
	1991	2001	2006[3]
Potential Labour Force (15 years and older)[4]	1,040	1,445	350
Active Labour Force – Employed[5]	290	515	180
Active Labour Force – Unemployed[5]	185	340	30
Not in the Labour Force[6]	570	600	135
Participation Rate[7]	46.2%	58.8%	61.4%
Employment Rate[7]	27.9%	35.6%	51.4%
Unemployment Rate[7]	38.5%	40.0%	14.0%

Source: Statistics Canada 1992, 2002, 2007a.
Notes:

1. Labour Force Characteristics are based on 20% sample data. Statistics Canada data are subject to a random rounding procedure.
2. KCNs includes Members of TCN, WLFN, FLCN and YFFN. Statistics Canada refers to these communities as Split Lake, Ilford, Fox Lake 2 and York Landing, respectively.
3. Figures exclude TCN and FLCN. Data have been suppressed by Statistics Canada.
4. Potential labour force defined as all individuals 15 years of age and older.
5. Employed Active Labour Force and the Unemployed Active Labour Force calculated by InterGroup Consultants based on Statistics Canada employment and unemployment rates.
6. 'Not in the Labour Force' calculated by InterGroup Consultants based on Statistics Canada data as the difference between the total KCNs population 15 years and over and the combined number of employed and unemployed individuals in the Active Labour Force.
7. The participation rate and employment rate are expressed as a percentage of the total population 15 years of age and over; the unemployment rate is expressed as a percentage of the total active labour force. Each is based on individual data for the week (Sunday to Sunday) prior to Census Day. Each is calculated as a weighted average of the populations of TCN, WLFN, FLCN and YFFN (or in the case of 2006, a weighted average of WLFN and YFFN).

Table 3A-2: Employment, Participation and Unemployment Rates in KCNs Communities and Comparison Populations (2001)

Characteristics[1]	KCNs Members[2]	Comparison Populations		
		Northern Aboriginal Residents[3]	Northern Region[4]	Manitoba
Potential Labour Force (15 years and older)[5]	1,445	33,990	54,945	869,315
Active Labour Force – Employed[6]	515	12,475	27,445	549,990
Active Labour Force – Unemployed[6]	340	4,785	5,665	35,430
Not in the Labour Force[7]	600	16,730	21,825	283,895
Participation Rate[8]	58.8%	50.8%	60.3%	67.3%
Employment Rate[8]	35.6%	36.7%	49.9%	63.3%
Unemployment Rate[8]	40.0%	27.7%	17.1%	6.1%

Source: Statistics Canada 2002.

Notes:

1. Labour Force Characteristics are based on 20% sample data. Statistics Canada data are subject to a random rounding procedure.
2. KCNs includes Members of TCN, WLFN, FLCN and YFFN. Statistics Canada refers to these communities as Split Lake, Ilford, Fox Lake 2 and York Landing, respectively.
3. Northern Aboriginal residents defined as Aboriginal Identity Population in Statistics Canada Census Divisions 19, 21, 22 and 23.
4. The Northern Region is defined as Statistics Canada Census Divisions 19, 21, 22 and 23.
5. Potential labour force defined as all individuals 15 years of age and older.
6. Employed Active Labour Force and the Unemployed active labour force for the KCNs, Northern Region and Northern Aboriginal residents calculated by InterGroup Consultants based on Statistics Canada employment and unemployment rates.
7. 'Not in the Labour Force' calculated by InterGroup Consultants based on Statistics Canada: for KCNs, Northern Aboriginal residents and the Northern Region, calculated as the difference between each population and the combined number of employed and unemployed individuals in the Active Labour Force.
8. The participation rate and employment rate are expressed as a percentage of the total population 15 years of age and over; the unemployment rate is expressed as a percentage of the total active labour force. Each is based on individual data for the week (Sunday to Sunday) prior to Census Day. Each is calculated as a weighted average of the populations of TCN, WLFN, FLCN and YFFN.

Table 3A-3: Highest Level of Education in KCNs Communities and Comparison Populations (2001)

Characteristics[1,2]	KCNs Members[3]	Comparison Populations		
		Northern Aboriginal Residents[4,5]	Northern Region[6]	Manitoba
Population 20 years and over[7]	1,260	24,335	47,555	789,615
Less than high school certificate[8]	760 (60.3%)	14,500 (59.6%)	22,910 (48.2%)	271,895 (34.4%)
High school certificate or equivalent[9]	85 (6.7%)	1,420 (5.8%)	4,045 (8.5%)	89,725 (11.4%)
Trades certificate or diploma	100 (7.9%)	n/a	6,160 (13.0%)	92,545 (11.7%)
Post secondary non-university certificate or diploma[10]	90 (7.1%)	n/a	5,240 (11.0%)	112,870 (14.3%)
University certificate or diploma[11]	20 (1.6%)	n/a	665 (1.4%)	19,270 (2.4%)
Some post-secondary education[12]	145 (11.5%)	2,530 (10.4%)	4,840 (10.2%)	90,160 (11.4%)
Trades, college or university certificate or degree (below bachelor's level)	n/a	4,980 (20.5%)	n/a	n/a
University degree[13]	55 (4.4%)	885 (3.6%)	3,715 (7.8%)	113,150 (14.3%)

Source: Statistics Canada 2002.
Notes:

1. Highest Level of Educational Attainment is based on 20% sample data. All Statistics Canada data are subject to a random rounding procedure.
2. 'Highest Level of Education Attained' refers to the highest certificate, diploma or degree that an individual has completed based primarily on time spent 'in-class'. For high school graduates, a university education is considered to be a higher level of education than a college diploma, while a college education is considered to be a higher level education than a trade. Although some trades requirements may take as long or longer to complete than a college or university program, the majority of time acquiring trade certification may be on-the-job training, as opposed to being in a classroom.
3. KCNs Members includes Members of TCN, WLFN, FLCN and YFFN. Statistics Canada refers to these communities as Split Lake, Ilford, Fox Lake 2 and York Landing, respectively.
4. Northern Aboriginal residents defined as Aboriginal Identity Population in Statistics Canada Census Divisions 19, 21, 22 and 23.
5. Data source for Northern Aboriginal residents is Statistics Canada website, 2001 Census of Canada Aboriginal Population Profiles. The organization of education data on Statistics Canada website differs from other sources, with

categories of educational attainment difficult to compare to the original categories. For this reason, the data have been maintained in website categories to reduce errors.

6. The Northern Region is defined as Statistics Canada Census Divisions 19, 21, 22 and 23.
7. Northern Aboriginal residents' population is provided for 25 years and over, while comparison populations use 20 years and over.
8. The 2001 data set used the education categories "Grades 9-13 without secondary certificate" and "Less than grade 9". Data for these education categories have been placed under "Less than high school certificate".
9. The 2001 data set used the education category "Grades 9-13 with high school graduation certificate". Data for this education category have been placed under "High school certificate or equivalent".
10. The 2001 data set used the education category "College – with certificate or diploma". Data for this education category have been placed under "Postsecondary non-university certificate or diploma".
11. The 2001 data set used the education category "University - with certificate or diploma". Data for this education category have been placed under "University certificate or diploma".
12. The 2001 data set used the education categories "College – without certificate or diploma" and "University – without certificate or diploma". Data for these education categories have been placed under "Some post-secondary".
13. The 2001 data set used the education category "University - with bachelor's degree or higher". Data for this education category have been placed under "University degree".

Table 3A-4: Labour Force by Occupation Classification in KCNs Communities (2001)

Characteristics[1]	KCNs[2]	Comparison Populations		
		Northern Aboriginal Residents[3]	Northern Region[4]	Manitoba
Total labour force 15 years and over	845	15,435	33,120	585,420
Not applicable[5]	195 (23.1%)	n/a	1,935 (5.8%)	8,075 (1.4%)
All occupations[6]	645 (76.3%)	n/a	31,180 (94.1%)	577,345 (98.6%)
Management occupations	50 (5.9%)	1,060 (6.9%)	2,395 (7.2%)	50,850 (8.7%)
Business, finance and administration occupations	60 (7.1%)	1,570 (10.2%)	3,600 (10.9%)	101,940 (17.4%)
Natural and applied sciences and related occupations	10 (1.2%)	240 (1.6%)	1,210 (3.6%)	26,695 (4.6%)
Health occupations	25 (3.0%)	540 (3.5%)	1,380 (4.2%)	36,690 (6.3%)
Social science, education, government service and religion	140 (16.6%)	2,230 (14.4%)	3,940 (11.9%)	45,890 (8%)
Art, culture, recreation and sport	0	180 (1.2%)	380 (1.1%)	12,165 (2.1%)
Sales and service occupations	195 (23.1%)	5,120 (33.2%)	8,685 (26.2%)	139,940 (23.9%)
Trades, transport and equipment operators and related occupations	140 (16.6%)	2,880 (18.7%)	5,710 (17.2%)	85,640 (14.6%)
Occupations unique to primary industry	10 (1.2%)	1,140 (7.4%)	2,615 (7.9%)	40,580 (6.9%)
Occupations unique to processing, manufacturing and utilities	20 (2.4%)	475 (3.1%)	1,270 (3.8%)	36,945 (6.3%)

Source: Statistics Canada 2002.

Notes:

1. Labour Force Characteristics are based on 20% sample data. Statistics Canada data are subject to a random rounding procedure.
2. KCNs includes Members of TCN, WLFN, FLCN and YFFN. Statistics Canada refers to these communities as Split Lake, Ilford, Fox Lake 2 and York Landing, respectively.
3. Northern Aboriginal residents defined as Aboriginal Identity Population in Statistics Canada Census Divisions 19, 21, 22 and 23.
4. The Northern Region is defined as Statistics Canada Census Divisions 19, 21, 22 and 23.
5. Not available for Northern Aboriginal Resident population.
6. Not available for Northern Aboriginal Resident population.

Table 3A-5: Employment Model Skills by Job Category in KCNs (2014, 2021)

Skills By Job Category[1]	2014 (Construction Start)		2021 (Construction End)	
	KCNs Labour Supply Resulting From HNTEI[1]	KCNs Total Labour Supply[2]	KCNs Labour Supply Resulting From HNTEI[1]	KCNs Total Labour Supply[2]
DESIGNATED TRADES (CONSTRUCTION, TRANSPORTATION AND INDUSTRIAL)	31	83	31	87
Crane Operator	2	2	2	2
Mechanic		7	-	7
Carpenter	20	45	20	44
Millwright (Industrial Mechanic)	4	6	4	6
Iron Worker (excluding Reinforcing Workers)	1	1	1	1
Electrician	3	9	3	11
Lineman	-	5	-	6
Plumber	1	8	1	10
Welder	-	-	-	-
NON-DESIGNATED TRADES (CONSTRUCTION, TRANSPORTATION AND INDUSTRIAL)	116	165	116	169
Trade Helpers and Construction Labours	23	39	23	41
Driller / Blaster	-	1	-	1
Heavy Equipment Operator (excluding Crane Operators)	50	63	50	63
Teamster	34	53	34	55
Serviceman (including Oilers, Warehouseman)	9	9	9	9
CONSTRUCTION SUPPORT AND SERVICE TRADES	95	231	95	253

Table 3A-5: Employment Model Skills by Job Category in KCNs (2014, 2021)

Skills By Job Category[1]	2014 (Construction Start)		2021 (Construction End)	
	KCNs Labour Supply Resulting From HNTEI[1]	KCNs Total Labour Supply[2]	KCNs Labour Supply Resulting From HNTEI[1]	KCNs Total Labour Supply[2]
Technical (Surveyors and Drafting)	10	22	10	28
Clerical (Clerks and Typists)	48	65	48	66
Catering and Janitorial	6	63	6	75
Security	31	65	31	68
First Aid[3]	-	5	-	5
Employee Retention Support[3]	-	11	-	11
TOTAL	242	479	242	509

Source: Derived from Wuskwatim Keeyask Training Consortium 2009/10 fourth quarter report. Analysis prepared by InterGroup Consultants Inc., 2010.

Notes:

1. Table includes a portion (5%) of apprentices that have achieved less than Level 1 apprenticeship. Table includes graduates that have undertaken training through the HNTEI in occupational classifications that align with Keeyask workforce estimates as of August 2010.
2. A factor of 80% was applied to off-reserve KCNs residents. This means that 80% of off-reserve KCNs residents were assumed to be either living in the region in communities such as Thompson and Gillam or would be returning from southern Manitoba to take advantage of employment opportunities. This skills inventory identifies the estimated maximum number of KCNs Members available to work on the Project and includes people who are already employed, may not have the proper qualifications required by hydro projects and who may not be available to secure employment opportunities when they arise. These and other factors are taken into account during the scenario analysis portion of the employment modeling.
3. No information is available for the First Aid and Employee Retention Support categories. The data provided here is based on an assumption that all workforce demand in these categories will be filled by KCNs supply.

Table 3A-6: Change in Employment, Participation and Unemployment Rates in Gillam (1991, 2001, 2006)

Characteristics[1]	Gillam		
	1991	2001	2006
Potential Labour Force (15 years and older)[2]	1,325	815	855
Active Labour Force – Employed	930	580	605
Active Labour Force – Unemployed	115	40	55
Not in the Labour Force	285	195	190
Participation Rate[3]	78.5%	76.7%	77.8%
Employment Rate[3]	70.2%	71.2%	70.8%
Unemployment Rate[3]	11.1%	6.4%	8.3%

Source: Statistics Canada 1992, 2002, 2007a.

Notes:

1. Labour Force Characteristics are based on 20% sample data. Statistics Canada data are subject to a random rounding procedure.
2. Potential labour force defined as all individuals 15 years of age and older.
3. The participation rate, employment rate and unemployment rate refer to the labour force, number of persons employed and number of persons unemployed (respectively) during the week (Sunday to Sunday) prior to Census Day. The participation rate and employment rate are expressed as a percentage of the total population 15 years of age and over; the unemployment rate is expressed as a percentage of the total active labour force.

Table 3A-7: Employment, Participation and Unemployment Rates in Gillam and Comparison Populations (2001)

Characteristics[1]	Gillam	Comparison Populations		
		Northern Aboriginal Residents[2]	Northern Region[3]	Manitoba
Potential Labour Force (15 years and older)[4]	815	33,990	54,945	869,315
Active Labour Force – Employed[5]	580	12,475	27,445	549,990
Active Labour Force – Unemployed[5]	40	4,785	5,665	35,430
Not in the Labour Force[6]	195	16,730	21,825	283,895
Participation Rate[7]	76.7%	50.8%	60.3%	67.3%
Employment Rate[7]	71.2%	36.7%	49.9%	63.3%
Unemployment Rate[7]	6.4%	27.7%	17.1%	6.1%

Source: Statistics Canada 2002.

Notes:

1. Labour Force Characteristics are based on 20% sample data. Statistics Canada data are subject to a random rounding procedure.
2. Northern Aboriginal residents defined as Aboriginal Identity Population in Statistics Canada Census Divisions 19, 21, 22 and 23.
3. The Northern Region is defined as Statistics Canada Census Divisions 19, 21, 22 and 23.
4. Potential labour force defined as all individuals 15 years of age and older.
5. Employed Active Labour Force and the Unemployed Active Labour Force for Gillam and comparison populations calculated by InterGroup Consultants based on Statistics Canada employment and unemployment rates.
6. 'Not in the Labour Force' calculated by InterGroup Consultants based on Statistics Canada: for Gillam and comparison populations, calculated as the difference between each population and the combined number of employed and unemployed individuals in the Active Labour Force.
7. The participation rate and employment rate are expressed as a percentage of the total population 15 years of age and over; the unemployment rate is expressed as a percentage of the total active labour force. Each is based on individual data for the week (Sunday to Sunday) prior to Census Day. Each is calculated as a weighted average of the population.

Table 3A-8: Highest Level of Education in Gillam and Comparison Populations (2001)

Characteristics[1,2]	Gillam	Comparison Populations		
		Northern Aboriginal Residents[3,4]	Northern Region[5]	Manitoba
Population 20 years and over[6]	725	24,335	47,555	789,615
Less than high school certificate[7]	210 (29.0%)	14,500 (59.6%)	22,910 (48.2%)	271,895 (34.4%)
High school certificate or equivalent[8]	80 (11.0%)	1,420 (5.8%)	4,045 (8.5%)	89,725 (11.4%)
Trades certificate or diploma	150 (20.7%)	n/a	6,160 (13.0%)	92,545 (11.7%)
Post secondary non-university certificate or diploma[9]	140 (19.3%)	n/a	5,240 (11.0%)	112,870 (14.3%)
University certificate or diploma[10]	15 (2.1%)	n/a	665 (1.4%)	19,270 (2.4%)
Some post-secondary	n/a	2,530 (10.4%)	4,840 (10.2%)	90,160 (11.4%)
Trades, college or university certificate or degree (below bachelor's level)	n/a	4,980 (20.5%)	n/a	n/a
University degree[11]	70 (9.7%)	885 (3.6%)	3,715 (7.8%)	113,150 (14.3%)

Source: Statistics Canada 2002.

Notes:

1. Highest Level of Educational Attainment is based on 20% sample data. Statistics Canada data are subject to a random rounding procedure.
2. 'Highest Level of Education Attained' refers to the highest certificate, diploma or degree that an individual has completed based primarily on time spent 'in-class'. For high school graduates, a university education is considered to be a higher level of education than a college diploma, while a college education is considered to be a higher level education than a trade. Although some trades requirements may take as long or longer to complete than a college or university program, the majority of time acquiring trade certification may be on-the-job training, as opposed to being in a classroom.
3. Northern Aboriginal residents defined as Aboriginal Identity Population in Statistics Canada Census Divisions 19, 21, 22 and 23.
4. Data source for Northern Aboriginal residents is Statistics Canada website, 2001 Census of Canada Aboriginal Population Profiles. The organization of education data on Statistics Canada website differs from other sources, with categories of educational attainment difficult to compare to the original categories. For this reason, the data have been maintained in website categories to reduce errors.
5. The Northern Region is defined as Statistics Canada Census Divisions 19, 21, 22 and 23.
6. Northern Aboriginal residents' population is provided for 25 years and over, while comparison populations use 20 years and over.
7. The 2001 data set used the education categories "Grades 9-13 without secondary certificate" and "Less than rade 9". Data for these education categories have been placed under "Less than high school certificate".
8. The 2001 data set used the education category "Grades 9-13 with high school graduation certificate". Data for this

education category have been placed under “High school certificate or equivalent”.

9. The 2001 data set used the education category “College – with certificate or diploma”. Data for this education category have been placed under “Postsecondary non-university certificate or diploma”.
10. The 2001 data set used the education category “University - with certificate or diploma”. Data for this education category have been placed under “University certificate or diploma”.
11. The 2001 data set used the education category “University - with bachelor’s degree or higher”. Data for this education category have been placed under “University degree”.

Table 3A-9: Labour Force by Occupation Classification in Gillam and Comparison Populations (2001)

Characteristics[1]	Gillam	Comparison Populations		
		Northern Aboriginal Residents[2]	Northern Region[3]	Manitoba
Total labour force 15 years and over	625	15,435	33,120	585,420
Not applicable[4]	10 (1.6%)	n/a	1,935 (5.8%)	8,075 (1.4%)
All occupations[5]	615 (98.4%)	n/a	31,180 (94.1%)	577,345 (98.6%)
Management occupations	45 (7.2%)	1,060 (6.9%)	2,395 (7.2%)	50,850 (8.7%)
Business, finance and administration occupations	75 (12.0%)	1,570 (10.2%)	3,600 (10.9%)	101,940 (17.4%)
Natural and applied sciences and related occupations	55 (8.8%)	240 (1.6%)	1,210 (3.7%)	26,695 (4.6%)
Health occupations	30 (4.8%)	540 (3.5%)	1,380 (4.2%)	36,690 (6.3%)
Occupations in social science, education, government service and religion	55 (8.8%)	2,230 (14.4%)	3,940 (11.9%)	45,890 (7.8%)
Occupations in art, culture, recreation and sport	0 (0.0%)	180 (1.2%)	380 (1.1%)	12,165 (2.1%)
Sales and service occupations	120 (19.2%)	5,120 (33.2%)	8,685 (26.2%)	139,940 (23.9%)
Trades, transport and equipment operators and related occupations	210 (33.6%)	2,880 (18.7%)	5,710 (17.2%)	85,640 (14.6%)
Occupations unique to primary industry	10 (1.6%)	1,140 (7.4%)	2,615 (7.9%)	40,580 (6.9%)
Occupations unique to processing, manufacturing and utilities	10 (1.6%)	475 (3.1%)	1,270 (3.8%)	36,945 (6.3%)

Source: Statistics Canada 2002.

Notes:

1. Labour Force Characteristics are based on 20% sample data. Statistics Canada data are subject to a random rounding procedure.
2. Northern Aboriginal residents defined as Aboriginal Identity Population in Statistics Canada Census Divisions 19, 21, 22 and 23.
3. The Northern Region is defined as Statistics Canada Census Divisions 19, 21, 22 and 23.
4. Not available for Northern Aboriginal Resident population.
5. Not available for Northern Aboriginal Resident population.

Table 3A-10: Change in Employment, Participation and Unemployment Rates in Thompson (1991, 2001, 2006)

Characteristics[1]	Thompson		
	1991	2001	2006
Potential Labour Force (15 years and older)[2]	10,620	9,495	9,790
Active Labour Force – Employed	7,615	7,030	6,970
Active Labour Force – Unemployed	690	535	520
Not in the Labour Force	2,320	1,940	2,300
Participation Rate[3]	78.2%	79.6%	76.5%
Employment Rate[3]	71.7%	74.0%	71.2%
Unemployment Rate[3]	8.3%	7.1%	6.9%

Source: Statistics Canada 1992, 2002, 2007a.
Notes:

1. Labour Force Characteristics are based on 20% sample data. Statistics Canada data are subject to a random rounding procedure.
2. Potential labour force defined as all individuals 15 years of age and older.
3. The participation rate, employment rate and unemployment rate refer to the labour force, number of persons employed, and number of persons unemployed (respectively) in the week (Sunday to Sunday) prior to Census Day. The participation rate and employment rate are expressed as a percentage of the total population 15 years of age and over; the unemployment rate is expressed as a percentage of the total active labour force.

Table 3A-11: Employment, Participation and Unemployment Rates in Thompson and Comparison Populations (2001)

Characteristics[1]	Thompson	Comparison Populations		
		Northern Aboriginal Residents[2]	Northern Region[3]	Manitoba
Potential Labour Force (15 years and older)[4]	9,495	33,990	54,945	869,315
Active Labour Force – Employed[5]	7,030	12,475	27,445	549,990
Active Labour Force – Unemployed[5]	535	4,785	5,665	35,430
Not in the Labour Force[6]	1,940	16,730	21,825	283,895
Participation Rate[7]	79.6%	50.8%	60.3%	67.3%
Employment Rate[7]	74.0%	36.7%	49.9%	63.3%
Unemployment Rate[7]	7.1%	27.7%	17.1%	6.1%

Source: Statistics Canada 2002.

Notes:

1. Labour Force Characteristics are based on 20% sample data. Statistics Canada data are subject to a random rounding procedure.
2. Northern Aboriginal residents defined as Aboriginal Identity Population in Statistics Canada Census Divisions 19, 21, 22 and 23.
3. The Northern Region is defined as Statistics Canada Census Divisions 19, 21, 22 and 23.
4. Potential labour force defined as all individuals 15 years of age and older.
5. Employed Active Labour Force and Unemployed Active Labour Force for Thompson and comparison populations are calculated by InterGroup Consultants based on Statistics Canada employment and unemployment rates.
6. 'Not in the Labour Force' calculated by InterGroup Consultants based on Statistics Canada data. For Thompson and comparison populations, calculated as the difference between each population and the combined number of employed and unemployed individuals in the Active Labour Force.
7. The participation rate, employment rate and unemployment rate refer to the labour force, number of persons employed, and number of persons unemployed (respectively) in the week (Sunday to Sunday) prior to Census Day. The participation rate and employment rate are expressed as a percentage of the total population 15 years of age and over; the unemployment rate is expressed as a percentage of the total active labour force.

Table 3A-12: Highest Level of Education in Thompson and Comparison Populations (2001)

Characteristics[1,2]	Thompson	Comparison Populations		
		Northern Aboriginal Residents[3,4]	Northern Region[5]	Manitoba
Population 20 years and over[6]	8,385	24,335	47,555	789,615
Less than high school certificate[7]	2,815 (33.6%)	14,500 (59.6%)	22,910 (48.2%)	271,895 (34.4%)
High school certificate or equivalent[8]	800 (9.5%)	1,420 (5.8%)	4,045 (8.5%)	89,725 (11.4%)
Trades certificate or diploma	1,305 (15.6%)	n/a	6,160 (13.0%)	92,545 (11.7%)
Post secondary non-university certificate or diploma[9]	1,275 (15.2%)	n/a	5,240 (11.0%)	112,870 (14.3%)
University certificate or diploma[10]	155 (1.8%)	n/a	665 (1.4%)	19,270 (2.4%)
Some post-secondary	n/a	2,530 (10.4%)	4,840 (10.2%)	90,160 (11.4%)
Trades, college or university certificate or degree (below bachelor's level)	n/a	4,980 (20.5%)	n/a	n/a
University degree[11]	1,065 (12.7%)	885 (3.6%)	3,715 (7.8%)	113,150 (14.3%)

Source: Statistics Canada 2002.

Notes:

1. Highest Level of Educational Attainment is based on 20% sample data. Statistics Canada data are subject to a random rounding procedure.
2. 'Highest Level of Education Attained' refers to the highest certificate, diploma or degree that an individual has completed based primarily on time spent 'in-class'. For high school graduates, a university education is considered to be a higher level of education than a college diploma, while a college education is considered to be a higher level education than a trade. Although some trades requirements may take as long or longer to complete than a college or university program, the majority of time acquiring trade certification may be on-the-job training, as opposed to being in a classroom.
3. Northern Aboriginal residents defined as Aboriginal Identity Population in Statistics Canada Census Divisions 19, 21, 22 and 23.
4. Data source for Northern Aboriginal residents is Statistics Canada website, 2001 Census of Canada Aboriginal Population Profiles. The organization of education data on Statistics Canada website differs from other sources, with

categories of educational attainment difficult to compare to the original categories. For this reason, the data have been maintained in website categories to reduce errors.

5. The Northern Region is defined as Statistics Canada Census Divisions 19, 21, 22 and 23.
6. Northern Aboriginal residents' population is provided for 25 years and over, while comparison populations use 20 years and over.
7. The 2001 data set used the education categories "Grades 9-13 without secondary certificate" and "Less than grade 9". Data for these education categories have been placed under "Less than high school certificate".
8. The 2001 data set used the education category "Grades 9-13 with high school graduation certificate". Data for this education category have been placed under "High school certificate or equivalent".
9. The 2001 data set used the education category "College – with certificate or diploma". Data for this education category have been placed under "Postsecondary non-university certificate or diploma".
10. The 2001 data set used the education category "University - with certificate or diploma". Data for this education category have been placed under "University certificate or diploma".
11. The 2001 data set used the education category "University - with bachelor's degree or higher". Data for this education category have been placed under "University degree".

Table 3A-13: Labour Force by Occupation Classification in Thompson and Comparison Populations (2001)

Characteristics[1]	Thompson	Comparison Populations		
		Northern Aboriginal Residents[2]	Northern Region[3]	Manitoba
Total labour force 15 years and over	7,565	15,435	33,120	585,420
Not applicable[4]	170 (2.2%)	n/a	1,935 (5.8%)	8,075 (1.4%)
All occupations[5]	7,385 (97.6%)	n/a	31,180 (94.1%)	577,345 (98.6%)
Management occupations	465 (6.1%)	1,060 (6.9%)	2,395 (7.2%)	50,850 (8.7%)
Business, finance and administration occupations	1,040 (13.7%)	1,570 (10.2%)	3,600 (10.9%)	101,940 (17.4%)
Natural and applied sciences and related occupations	480 (6.3%)	240 (1.6%)	1,210 (3.7%)	26,695 (4.6%)
Health occupations	355 (4.7%)	540 (3.5%)	1,380 (4.2%)	36,690 (6.3%)
Occupations in social science, education, government service and religion	885 (11.7%)	2,230 (14.4%)	3,940 (11.9%)	45,890 (7.8%)
Occupations in art, culture, recreation and sport	95 (1.3%)	180 (1.2%)	380 (1.1%)	12,165 (2.1%)
Sales and service occupations	1,860 (24.6%)	5,120 (33.2%)	8,685 (26.2%)	139,940 (23.9%)
Trades, transport and equipment operators and related occupations	1,215 (16.1%)	2,880 (18.7%)	5,710 (17.2%)	85,640 (14.6%)
Occupations unique to primary industry	630 (8.3%)	1,140 (7.4%)	2,615 (7.9%)	40,580 (6.9%)
Occupations unique to processing, manufacturing and utilities	365 (4.8%)	475 (3.1%)	1,270 (3.8%)	36,945 (6.3%)

Source: Statistics Canada 2002.

Notes:

1. Labour Force Characteristics are based on 20% sample data. Statistics Canada data are subject to a random rounding procedure.
2. Northern Aboriginal residents defined as Aboriginal Identity Population in Statistics Canada Census Divisions 19, 21, 22 and 23.
3. The Northern Region is defined as Statistics Canada Census Divisions 19, 21, 22 and 23.
4. Not available for Northern Aboriginal Resident population.
5. Not available for Northern Aboriginal Resident population.

Table 3A-14: Sources of Income by Local Study Area Communities and Comparison Populations (2001, 2006)

2001	KCNs [1]	Thompson	Gillam	Northern Aboriginal Population [2]	Northern Region [2]	MB
Employment Income	65%	89%	94%	68%	77%	75%
Government Payments	33%	6%	4%	30%	19%	13%
Other	2%	4%	2%	2%	4%	11%
2006						
Employment Income	76%	88%	94%	69%	77%	78%
Government Payments	24%	8%	6%	29%	20%	11%
Other	0%	4%	1%	2%	4%	11%

Source: Statistics Canada 2002, 2007a.

Notes:

1. 2001 Census data based on Split Lake and York Landing data. 2006 Census data based on York Landing data. York Landing data remained relatively constant during this period. Change from 2001 to 2006 results from loss of Split Lake data.
2. The Northern Region and northern Aboriginal figures based on weighted average of Census Divisions 19, 21, 22 and 23 weighted by total people with earnings.

Table 3A-15: Weekly Revised Northern Food Basket (RNFB) Food Costs for Family of Four by Community (June-November 2009)[1, 2]

Food Categories[3]	Winnipeg[4]	Thompson[5]	Gillam[6]	Split Lake[7]	York Landing[8, 9]
Dairy Products	$40.58	$37.45	$48.20	$53.11	$65.85
Eggs	$1.92	$1.76	$1.60	$1.76	$2.80
Meat, Poultry & Fish	$58.18	$63.38	$67.40	$75.24	$75.78
Meat Preparations & Alternatives	$5.98	$7.73	$6.02	$6.97	$6.71
Grain Products[10]	$20.08	$18.54	$22.77	$21.56	$28.49
Citrus Fruit[11]	$10.56	$9.50	$8.49	$12.01	$13.68
Other Fruit	$24.83	$33.83	$41.09	$41.19	$31.84
Potatoes	$6.68	$11.58	$9.84	$10.95	$17.35
Other Vegetables	$29.07	$32.28	$36.19	$32.89	$33.93
Fats & Oils	$8.00	$7.84	$8.41	$6.89	$9.33
Sugar	$1.05	$1.08	$1.32	$1.38	$1.98
TOTAL	$206.93	$224.98	$251.33	$263.95	$287.75
Winnipeg Baseline	*0%*	*9%*	*21%*	*28%*	*39%*
Thompson Baseline		*0%*	*12%*	*17%*	*28%*

Source: InterGroup Consultants research based on RNFB Survey and Price Selection Procedure 2007 (RNFB 2008a, 2008b).

Notes:

1. Food prices were collected and calculated based on standard scalars provided by the RNFB Price Selection Procedures. These calculated prices have been weighted to reflect nutritional needs and food buying preferences in northern communities, resulting in standard RNFB prices. The weekly prices indicated have been multiplied to meet the needs of a family of four in the listed Keeyask communities.
2. Split Lake data was collected on November 4, 2009. Winnipeg data was collected November 19, with a follow-up visit on November 22, 2009. Gillam data was collected on June 18 and 19, 2009. York Landing data was collected on June 25 and 26, with a follow-up visit on September 15, 2009. Thompson data was collected on September 16 and 17.
3. The eleven food categories of the RNFB are comprised of 67 food items, organized based on food group.
4. Winnipeg data collected in one mid-sized store, Family Foods at 1881 Portage Avenue.
5. Thompson data was collected in two stores: the Thompson Safeway and the Thompson Extra Foods.
6. Gillam data was collected in one store, the Gillam Co-op.
7. Split Lake data was collected at the Northern Store.
8. York Factory data was collected at the Ripple River Store on two separate occasions. After data collection was undertaken, the store closed for business but re-opened a few months later under Band management.
9. The price calculations for York Landing are missing a number of key products in several of the eleven food categories, including Dairy Products, Meat Preparations and Alternatives, Grain Products, Citrus Fruit, Other Fruit and Other Vegetable categories.
10. Grain products include Pilot Biscuits, a food item only available in Split Lake and as such, not included in the RNFB price analysis for the Local Study Area.
11. Citrus fruit includes tomato juice and other tomato-based products, as well as apple juices. Raw tomatoes and apples are included in the price calculations for Other Vegetables and Other Fruit, respectively.

Table 3A-16: Change in Employment, Participation and Unemployment Rates among Northern Aboriginal Residents (1991, 2001, 2006)

Characteristics[1]	Northern Aboriginal Residents[2]		
	1991	2001	2006
Potential Labour Force (15 years and older)[3]	26,785	33,990	38,640
Active Labour Force – Employed[4]	9,235	12,475	14,365
Active Labour Force – Unemployed[4]	3,690	4,785	4,770
Not in the Labour Force[5]	13,870	16,730	19,505
Participation Rate[6]	48.2%	50.8%	49.5%
Employment Rate[6]	34.5%	36.7%	37.2%
Unemployment Rate[6]	28.6%	27.7%	24.9%

Source: Statistics Canada 2002, 2007a.

Notes:

1. Labour Force Characteristics are based on 20% sample data. Statistics Canada data are subject to a random rounding procedure.
2. Northern Aboriginal residents defined as Aboriginal Identity Population in Statistics Canada Census Divisions 19, 21, 22 and 23.
3. Potential labour force defined as all individuals 15 years of age and older.
4. Employed Active Labour Force and the Unemployed Active Labour Force for the Northern Aboriginal residents calculated by InterGroup Consultants based on Statistics Canada employment and unemployment rates.
5. 'Not in the Labour Force' calculated by InterGroup Consultants based on Statistics Canada data. For Northern Aboriginal residents, calculated as the difference between the total Aboriginal Identity Population 15 years and over and the combined number of employed and unemployed individuals in the Active Labour Force.
6. The participation rate, employment rate and unemployment rate refer to the labour force, number of persons employed, and number of persons unemployed (respectively) in the week (Sunday to Sunday) prior to Census Day. The participation rate and employment rate are expressed as a percentage of the total population 15 years of age and over; the unemployment rate is expressed as a percentage of the total active labour force.

Table 3A-17: Employment, Participation and Unemployment Rates among Northern Aboriginal Residents (2001)

Characteristics[1]	Northern Aboriginal Residents[2]	Comparison Populations		
		Regional Study Area[3]	Manitoba	Canada
Potential Labour Force (15 years and older)[4]	33,990	54,945	869,315	23,901,360
Active Labour Force – Employed[5]	12,475	27,445	549,990	14,695,135
Active Labour Force – Unemployed[5]	4,785	5,665	35,430	1,175,935
Not in the Labour Force[6]	16,730	21,825	283,895	8,029,290
Participation Rate[7]	50.8%	60.3%	67.3%	66.4%
Employment Rate[7]	36.7%	49.9%	63.3%	61.5%
Unemployment Rate[7]	27.7%	17.1%	6.1%	7.4%

Source: Statistics Canada 2002.

Notes:

1. Labour Force Characteristics are based on 20% sample data. Statistics Canada data are subject to a random rounding procedure.
2. Northern Aboriginal residents defined as Aboriginal Identity Population in Statistics Canada Census Divisions 19, 21, 22 and 23.
3. The Regional Study Area is defined as Statistics Canada Census Divisions 19, 21, 22 and 23.
4. Potential labour force defined as all individuals 15 years of age and older.
5. Employed Active Labour Force and the Unemployed Active labour force for Northern Aboriginal residents calculated by InterGroup Consultants based on Statistics Canada employment and unemployment rates.
6. 'Not in the Labour Force' calculated by InterGroup Consultants based on Statistics Canada: for Northern Aboriginal residents and comparison populations, calculated as the difference between each population and the combined number of employed and unemployed individuals in the Active Labour Force.
7. The participation rate, employment rate and unemployment rate refer to the labour force, number of persons employed, and number of persons unemployed (respectively) in the week (Sunday to Sunday) prior to Census Day. The participation rate and employment rate are expressed as a percentage of the total population 15 years of age and over; the unemployment rate is expressed as a percentage of the total active labour force.

Table 3A-18: Distribution of Highest Level of Education Attained by Northern Aboriginal Residents (2001)

Characteristics[1,2]	Northern Aboriginal Residents[3,4]	Comparison Populations	
		Regional Study Area[5]	Manitoba
Population 20 years and over[6]	24,335	47,555	789,615
Less than high school certificate[7]	14,500 (59.6%)	22,910 (48.2%)	271,895 (34.4%)
High school certificate or equivalent[8]	1,420 (5.8%)	4,045 (8.5%)	89,725 (11.4%)
Trades certificate or diploma	n/a	6,160 (13.0%)	92,545 (11.7%)
Post secondary non-university certificate or diploma[9]	n/a	5,240 (11.0%)	112,870 (14.3%)
University certificate or diploma[10]	n/a	665 (1.4%)	19,270 (2.4%)
Some post-secondary	2,530 (10.4%)	4,840 (10.2%)	90,160 (11.4%)
Trades, college or university certificate or degree (below bachelor's level)	4,980 (20.5%)	n/a	n/a
University degree[11]	885 (3.6%)	3,715 (7.8%)	113,150 (14.3%)

Source: Statistics Canada 2002.

Notes:

1. Highest Level of Educational Attainment is based on 20% sample data. Statistics Canada data are subject to a random rounding procedure.
2. 'Highest Level of Education Attained' refers to the highest certificate, diploma or degree that an individual has completed based primarily on time spent 'in-class'. For high school graduates, a university education is considered to be a higher level of education than a college diploma, while a college education is considered to be a higher level education than a trade. Although some trades requirements may take as long or longer to complete than a college or university program, the majority of time acquiring trade certification may be on-the-job training, as opposed to being in a classroom.
3. Northern Aboriginal residents defined as Aboriginal Identity Population in Statistics Canada Census Divisions 19, 21, 22 and 23.
4. Data source for Northern Aboriginal residents is Statistics Canada website, 2001 Census of Canada Aboriginal Population Profiles. The organization of education data on Statistics Canada website differs from other sources, with categories of educational attainment difficult to compare to the original categories. For this reason, the data have been maintained in website categories to reduce errors.
5. The 2001 data set used the education categories "Grades 9-13 without secondary certificate" and "Less than grade 9". Data for these education categories have been placed under "Less than high school certificate".
6. The 2001 data set used the education category "Grades 9-13 with high school graduation certificate". Data for this education category have been placed under "High school certificate or equivalent".

7. The 2001 data set used the education category “College – with certificate or diploma”. Data for this education category have been placed under “Postsecondary non-university certificate or diploma”.
8. The 2001 data set used the education category “University - with certificate or diploma”. Data for this education category have been placed under “University certificate or diploma”.
9. The 2001 data set used the education category “University - with bachelor’s degree or higher”. Data for this education category have been placed under “University degree”.

Table 3A-19: Economic Structure and Distribution of Occupation Classification among Northern Aboriginal Residents (2001)

Characteristics[1]	Northern Aboriginal Residents[2]	Comparison Populations	
		Regional Study Area[3]	Manitoba
Total labour force 15 years and over	15,435	33,120	585,420
Not applicable[4]	n/a	1,935 (5.8%)	8,075 (1.4%)
All occupations[5]	n/a	31,180 (94.1%)	577,345 (98.6%)
Management occupations	1,060 (6.9%)	2,395 (7.2%)	50,850 (8.7%)
Business, finance and administration occupations	1,570 (10.2%)	3,600 (10.9%)	101,940 (17.4%)
Natural and applied sciences and related occupations	240 (1.6%)	1,210 (3.7%)	26,695 (4.6%)
Health occupations	540 (3.5%)	1,380 (4.2%)	36,690 (6.3%)
Social science, education, government service and religion	2,230 (14.4%)	3,940 (11.9%)	45,890 (7.8%)
Art, culture, recreation and sport	180 (1.2%)	380 (1.1%)	12,165 (2.1%)
Sales and service occupations	5,120 (33.2%)	8,685 (26.2%)	139,940 (23.9%)
Trades, transport and equipment operators and related occupations	2,880 (18.7%)	5,710 (17.2%)	85,640 (14.6%)
Occupations unique to primary industry	1,140 (7.4%)	2,615 (7.9%)	40,580 (6.9%)
Occupations unique to processing, manufacturing and utilities	475 (3.1%)	1,270 (3.8%)	36,945 (6.3%)

Source: Statistics Canada 2002.

Notes:

1. Labour Force Characteristics are based on 20% sample data. Statistics Canada data are subject to a random rounding procedure.

2. Northern Aboriginal residents defined as Aboriginal Identity Population in Statistics Canada Census Divisions 19, 21, 22 and 23.
3. The Regional Study Area is defined as Statistics Canada Census Divisions 19, 21, 22 and 23.
4. Not available for Northern Aboriginal Resident population.
5. Not available for Northern Aboriginal Resident population.

Table 3A-20: Employment Model Northern Aboriginal and Churchill-Burntwood-Nelson Skills by Job Category (2014, 2021)

Skills by Project Job Category	2014			2021		
	NA HNTEI[1]	CBN[2]	NA[2]	NA HNTEI[1]	CBN[2]	NA[2]
DESIGNATED TRADES (Construction, Transportation And Industrial)	101	315	740	101	335	804
Crane Operator	2	2	2	2	2	2
Mechanic	0	28	83	0	31	93
Carpenter	73	179	388	73	175	378
Millwright (Industrial Mechanic)	4	14	34	4	11	26
Iron Worker (excluding Reinforcing Workers)	1	1	1	1	1	1
Electrician	14	38	86	14	46	110
Lineman	-	17	52	-	25	76
Plumber	5	34	92	5	42	116
Welders	2	2	2	2	2	2
NON-DESIGNATED TRADES (Construction, Transportation and Industrial)	345	552	970	345	565	1,005
Trade Helpers and Construction Labours	53	119	252	53	125	269
Driller / Blaster	-	3	10	-	3	10
Heavy Equipment Operator (excluding Crane Operators)	185	242	358	185	242	354
Teamster	98	179	341	98	186	363
Serviceman (including Oilers, Warehouseman)	9	9	9	9	9	9

Table 3A-21: Employment Model Northern Aboriginal and Churchill-Burntwood-Nelson Skills by Job Category (2014, 2021)

CONSTRUCTION SUPPORT AND SERVICE TRADES	149	681	1,676	149	771	1,949
Technical (Surveyors and Drafting)	10	60	157	10	87	241
Clerical (Clerks and Typists)	67	138	278	67	141	288
Catering and Janitorial	29	270	748	29	316	884
Security	43	183	463	43	197	506
First Aid[2]	-	5	5	-	5	5
Employee Retention Support	-	25	25	-	25	25
TOTAL	595	1,548	3,386	595	1,671	3,758

Source: Derived from Wuskwatim Keeyask Training Consortium 2009/10 fourth quarter report. Analysis prepared by InterGroup Consultants Inc. 2010.

Notes:

1. "NA" denotes Northern Aboriginal. Table includes a portion (5%) of apprentices that have achieved less than Level 1 apprenticeship. Table includes graduates that have undertaken training through the HNTEI in occupational classifications that align with Keeyask workforce estimates as of August 2010.
2. This skills inventory identifies the estimated maximum number of aboriginal people available to work on the Project and includes people who are already employed, may not have the proper qualifications required by hydro projects and who may not be available to secure employment opportunities when they arise. These and other factors are taken into account during the scenario analysis portion of the employment modeling.
   No information is available for the First Aid and Employee Retention Support categories. The data provided here is based on an assumption that all workforce demand in these categories will be filled by Northern Aboriginal supply.

Table 3A-22: Employment Earnings for Aboriginal Population and Total Populations of Northern Manitoba, Manitoba and Canada (2001)

	Northern Region[1,2]		Manitoba		Canada
	Aboriginal[3]	Total	Aboriginal	Total	Total
Population[4]	17,900	34,745	58,285	609,575	23,901,360
% of Population	52%	100%	10%	100%	100%
Average Earnings[5]	$17,998	$26,364	$19,271	$27,178	$29,769
% of Earnings[6]	68%	100%	71%	100%	100%

Source: Statistics Canada 2002.

Notes:

1. The Aboriginal portion of northern Manitoba is the same as Northern Aboriginal residents. Northern Aboriginal residents defined as Aboriginal Identity Population in Statistics Canada Census Divisions 19, 21, 22 and 23.
2. The Regional Study Area is defined as Statistics Canada Census Divisions 19, 21, 22 and 23.
3. For Aboriginal Identity Population. Statistics Canada describes the Aboriginal Identity Population as referring to "those persons who reported identifying with at least one Aboriginal group, that is, North American Indian, Metis or Inuit and/or those who reported being a Treaty Indian or a Registered Indian, as defined by the Indian Act of Canada and/or those who reported they were Members of an Indian band or First Nation" (Statistics Canada, 2001 Census Dictionary).
4. Total Population 15 years and over with earnings.
5. Average employment earnings.
6. Percentage of Earnings calculated by InterGroup Consultants comparing Aboriginal Identity Population average earnings to Total Population average earnings, if total population average earnings are considered to be 100%.

Table 3A-23: Sources of Income for Northern Aboriginal, Northern Manitoba, Manitoba and Canada (2001, 2006)

2001[1,2]	**Northern Aboriginal**[3,4]	**Regional Study Area**[5,6]	**Manitoba**	**Canada**
Employment Income	68.4%	76.9%	75.3%	77.1%
Government Payments	29.8%	19.0%	13.4%	11.6%
Other Income	1.8%	4.1%	11.3%	11.3%
2006[7]				
Employment Income	68.8%	75.3%	75.2%	76.2%
Government Payments	28.9%	20.0%	12.5%	11.1%
Other Income	2.3%	4.7%	12.3%	12.7%

Source: Statistics Canada 2002, 2007a.

Notes:

1. 'Sources of Income' calculated based on 20% sample data.
2. Statistics Canada refers to 'sources of income of a population group or a geographic area' as "the relative share of each income source or group of sources, expressed as a percentage of the aggregate total income of that group or area". Three groups of sources are used to determine total income: employment income, including wages, salaries and income from farm and non-farm self-employment; government transfer payments, including all transfers or payments received from any level of government and recorded as a separate income source; and other income, including investment income, retirement pension income and other money income. Percentages may not add to 100% due to rounding.
3. Northern Aboriginal residents defined as Aboriginal Identity Population in Statistics Canada Census Divisions 19, 21, 22 and 23.
4. Calculated by InterGroup Consultants as the simple averages of Employment Income, Government Payments and Other Income for the Aboriginal Identity Population of Statistics Canada Census Divisions 19, 21, 22 and 23.
5. The Regional Study Area is defined as Statistics Canada Census Divisions 19, 21, 22 and 23.
6. Calculated by InterGroup Consultants as the simple average of Employment Income, Government Payments and Other Income.
7. For the 2006 census, taxable benefits, research grants and royalties were counted as part of 'Wages and salaries' and included in the 'Employment income' category. In previous years, research grants and royalties were included in the 'Other income' category, while taxable benefits and allowances were formerly excluded as a source of income. Regular payments to motor vehicle accident victims from provincial or territorial governments formerly included as 'Other income from government sources', were excluded for the first time in the 2006 census.

APPENDIX 3B

COST OF LIVING IN KEEYASK COMMUNITIES TECHNICAL REPORT

KEEYASK
Hydropower Limited Partnership

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3B.0 COST OF LIVING IN KEEYASK COMMUNITIES TECHNICAL REPORT

3B.1 INTRODUCTION

This memo provides a technical summary of the projected effects of the Keeyask Generation Project on the cost of living in the Local Study Area. It summarizes the methodologies used to analyze the cost of living in northern communities, applies these methodologies across the Local Study Area, discusses where the Project may affect the cost of living and compares these results with the results of a similar tool used by the federal government.

The Local Study Area includes the regional centres of Thompson and Gillam and the four First Nation partner communities, also known as the Keeyask Cree Nations (KCNs) communities of Split Lake (TCN), York Landing (YFFN), Fox Lake (Bird) (FLCN) and Ilford (WLFN).

The results of this study indicate that costs of living are not likely to rise because of the Project. High living costs are simply a reality of living in northern Manitoba, primarily because of the small communities that exist here. During construction of the Project, the increased purchasing power created by Project employment may have some beneficial cost of living effects by encouraging better service across the Local Study Area, especially in KCNs communities. Thompson is the one community where there may be a potential for adverse cost of living effects. The strong economy in Thompson has created labour and housing shortages that may be affected by the Project, although any effects that occur would be small and short-lived.

3B.2 METHODLOGIES OVERVIEW

This analysis focuses on the three main living costs most likely to be affected during the construction and operation phases of the Project:

- Food and household items;
- Transportation within the Local Study Area; and
- Housing.

According to Statistics Canada, in 2007 Manitobans spent an average of 14.9% of total household expenditures on food and household items (not including tobacco and alcohol), 24.7% on housing and 15.3% on transportation. These costs make up more than 50% of household spending and make up the bulk of a household's non-discretionary spending (Statistics Canada 2008a, 2008b).

Of these three costs, the cost of food and other household items is generally the indicator most closely scrutinized because of its strong correlation with social and economic effects in related communities. The Consumer Price Index (CPI) is the most common tool used in Canada to measure variations in the cost of food and household items. The CPI, however, is designed to track cost differentials among large

homogenous populations in urban centres and is not well suited to assessing the cost of living for smaller populations living in the unique conditions experienced in northern Canada (for more information on the CPI and CPI methodology, see Statistics Canada 1996; Bank of Canada 2009).

The Revised Northern Food Basket (RNFB) was developed in 2007 by Indian and Northern Affairs Canada, under the auspices of their Northern Food Mail Program, as a way to monitor the cost of a thrifty food basket in both isolated northern communities and southern supply centres. The RNFB compares the combined food costs of a basket of groceries in Canada's northern communities with major centres such as Winnipeg. It consists of 67 items that reflect a balanced approach to Canada's Food Guide, including the Aboriginal Food Guide released in April 2007, and takes into account current food consumption patterns in northern communities. In this way, the RNFB overcomes some of the limitations associated with the CPI, particularly those related to food preferences and nutritional needs (INAC 2007; RNFB 2008a; RNFB 2008b).

From a nutritional point of view, the RNFB has been designed to meet the energy requirements of people whose activity level is within the "low-active" range – the minimum level of activity recommended for good health – with an added 5% to compensate for the additional energy needs associated with the colder climate of northern communities (INAC 2007; RNFB 2008b).

In addition to the nutritional guidelines used to develop the survey, the RNFB reflects average prices for each of the products in the basket rather than the lowest prices available in a community. In this way, the price data represents what consumers would typically pay to purchase the basket of goods. The RNFB also provides a uniform procedure for analysing comparative data between communities and a standard unit of measurement that can be manipulated to reflect weekly food costs for individuals or families, allowing for factors such as household composition, age, gender, pregnancy and lactation (for more information on the RNFB program, methodology and survey, see INAC 2007; RNFB 2008a; RNFB 2008b).

There are currently no formal tools similar to the RNFB available for assessing the costs of transportation and housing. Instead, a direct sampling approach has been used to gather as much available pricing information as possible. This information is then provided within a regional context to provide a more qualitative analysis than is used for the food and household items analysis.

Once each of the three main living costs has been analyzed the results are compared with the Price Index Differential (PID) cost of living measure used by the Treasury Board of Canada Secretariat and the National Joint Council for four Project Study Area communities, including Gillam, Ilford, Split Lake and York Factory. This comparison provides additional depth to the analysis and shows how cost results can be affected by different approaches to cost of living.

3B.3 FOOD AND HOUSEHOLD ITEMS

3B.3.1 REVISED NORTHERN FOOD BASKET SURVEY – SAMPLING METHODS AND RESULTS

RNFB price data was collected between June and November 2009 in four of the six communities in the Local Study Area – Thompson, York Landing, Split Lake and Gillam – as well as comparative data collected in Winnipeg in late November.

Unlike the Consumer Price Index, which focuses on changes to the price of select products, the RNFB focuses on differences between the weekly cost of food and household items for a family in a northern community compared to its southern counterpart. For this survey, data was calculated and analyzed to meet the needs of a family of four – a man and woman between the ages of 31 and 50 and a boy and girl between the ages of nine and 13. While weekly costs will vary for households with different compositions, this provides a relevant baseline for comparison among communities.

The data presented in this analysis is subject to a number of limitations. These include the long timeframe over which data was collected, the sizes of stores sampled in each community, as well as data collection by several consultants rather than one individual as prescribed by the RNFB guidelines. Nevertheless, the data is the most current and detailed available for comparing the cost of food and household items across the Local Study Area, and is useful as a representative approximation of consumer costs. Results are not intended to provide definitive results or to be comparable to other RNFB survey results.

3B.3.1.1 Summary of RNFB Results for Food Categories by Community

The RNFB data is presented in (Table 3B-1).

Table 3B-1: Weekly RNFB Food Prices for a Family of Four by Community - June to November 2009[1,2]

Food Categories[3]	Winnipeg[4]	Thompson[5]	Gillam[6]	Split Lake[7]	York Landing[8, 9]
Dairy Products	$40.58	$37.45	$48.20	$53.11	$65.85
Eggs	$1.92	$1.76	$1.60	$1.76	$2.80
Meat, Poultry & Fish	$58.18	$63.38	$67.40	$75.24	$75.78
Meat Preparations & Alternatives	$5.98	$7.73	$6.02	$6.97	$6.71
Grain Products[10]	$20.08	$18.54	$22.77	$21.56	$28.49
Citrus Fruit[11]	$10.56	$9.50	$8.49	$12.01	$13.68
Other Fruit	$24.83	$33.83	$41.09	$41.19	$31.84
Potatoes	$6.68	$11.58	$9.84	$10.95	$17.35
Other Vegetables	$29.07	$32.28	$36.19	$32.89	$33.93
Fats & Oils	$8.00	$7.84	$8.41	$6.89	$9.33
Sugar	$1.05	$1.08	$1.32	$1.38	$1.98
TOTAL	**$206.93**	**$224.98**	**$251.33**	**$263.95**	**$287.75**
Winnipeg Baseline	*0%*	*9%*	*21%*	*28%*	*39%*
Thompson Baseline		*0%*	*12%*	*17%*	*28%*

Source: InterGroup Consultants research based on RNFB Survey and Price Selection Procedure 2008a, 2008b.
Notes:

1. Food prices were collected and calculated based on standard scalars provided by the RNFB Price Selection Procedures. These calculated prices have been weighted to reflect nutritional needs and food buying preferences in northern communities, resulting in standard RNFB prices. The weekly prices indicated have been multiplied to meet the needs of a family of four in the listed Keeyask communities.
2. Split Lake data was collected on November 4, 2009. Winnipeg data was collected November 19, with a follow-up visit on November 22, 2009. Gillam data was collected on June 18 and 19, 2009. York Landing data was collected on June 25 and 26, with a follow-up visit on September 15, 2009. Thompson data was collected on September 16 and 17.
3. The eleven food categories of the RNFB are comprised of 67 food items, organized based on food group.
4. Winnipeg data collected in one mid-sized store, Family Foods at 1881 Portage Avenue.
5. Thompson data was collected in two stores: the Thompson Safeway and the Thompson Extra Foods.
6. Gillam data was collected in one store, the Gillam Co-op.
7. Split Lake data was collected at the Northern Store.
8. York Factory data was collected at the Ripple River Store on two separate occasions. After data collection was undertaken, the store closed for business but re-opened a few months later under Band management.
9. The price calculations for York Landing are missing a number of key products in several of the eleven food categories, including Dairy Products, Meat Preparations and Alternatives, Grain Products, Citrus Fruit, Other Fruit and Other Vegetable categories.
10. Grain products include Pilot Biscuits, a food item only available in Split Lake and as such, not included in the RNFB price analysis for the Local Study Area.
11. Citrus fruit includes tomato juice and other tomato-based products, as well as apple juices. Raw tomatoes and apples are included in the price calculations for Other Vegetables and Other Fruit, respectively.

3B.3.1.2 Ilford

With about 150 permanent residents, Ilford (War Lake) is one of the smallest communities in the Local Study Area. Ilford does not have a grocery store and no RNFB data was collected in the community.

3B.3.1.3 Fox Lake (Bird)

With about 150 permanent residents, Fox Lake (Bird) is one of the smallest communities in the Local Study Area. Goods in Fox Lake (Bird) were primarily available at the community's only grocery store, the Groceteria, until it closed for business on August 28, 2009 due to lack of supplies. This small shop offered staple items such as bread, milk, eggs, sugar, flour, vegetables, lard and toilet paper, as well as canned and frozen foods, pizza, bacon, chicken, chips, pop and candy. There are plans to build a new store in the community. Residents of Bird currently travel 50 km each way to Gillam for groceries (FLCN KPI Program 2009-2011). No RNFB data was collected at the store before it closed.

3B.3.1.4 York Landing

Prices were collected in York Landing at the Ripple River Store before its operations were suspended in October 2009. Subsequently, in late 2009, the store reopened under Band management[1]. With about 420 permanent residents, York Landing is the third smallest community in the Local Study Area. The data collected at the Ripple River Store provide an example of how prices are affected by the size and accessibility of a regional market.

The RNFB survey was conducted on two separate occasions in York Landing; nevertheless, many of the items in the survey were not available during either of the data collection periods. In fact, of the 67 items for which RNFB survey data was calculated, 14 items[2] and their RNFB-approved substitutions were completely unavailable, with more than six alternatives used to complete the price comparisons. The combination of higher prices and less selection causes some residents of York Landing to travel to Thompson or Split Lake to do their regular shopping (YFFN KPI Program 2009-2010). On at least one occasion, community Members even chartered a plane to bring in groceries and other items from outside the community (YFFN KPI Program 2009-2010).

Prior to disruption of service, the Ripple River Store was dependent on deliveries from Winnipeg by semi trailer, entering the community by ferry during the summer months and by ice road in winter. As a privately owned business, the costs associated with transporting products into the community were largely borne by consumers, often resulting in higher retail prices. During winter freeze up and spring thaw, the community is only accessible by air, which increases the shipping cost of groceries (YFFN KPI Program 2009-2010).

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[1] It is unclear whether the new Band management of the Ripper River store will affect the cost and availability of grocery items. For the purposes of this comparison, we assume that the new management has no measureable effect on cost of living.

[2] Not including calculation for Pilot Biscuits, as this item was only in Split Lake.

The prices calculated for York Landing are approximately 28% higher than prices for similar items in Thompson and 39% higher than prices in Winnipeg. The suspension of operations at the Ripple River Store and the closure of the Groceteria in Fox Lake (Bird) also illustrate the volatility of supplying items in remote communities.

3B.3.1.5 Split Lake

The prices gathered from Split Lake illustrate the comparative costs of supplying more isolated communities in the Local Study Area to those of larger markets. With less than 1,500 residents, the community of Split Lake (TCN) is the largest of the KCNs partner communities, but is located more than 100 km from Thompson.

Food price data was collected in Split Lake on November 4, 2009, at the Northern Store, part of a chain of food and sundry stores located across northern Canada and owned by the North West Company. The Northern Store in Split Lake receives supply shipments by truck twice each week, on Tuesdays and Fridays. Deliveries include fresh perishable fruit and vegetables, as well as dairy and meat products. Grey Goose Bus Lines and other companies, including Arctic Beverages and Old Dutch, also provide the community with freight and dry good deliveries on a daily basis[1]. The last delivery of perishable food to the Northern Store was on November 3, 2009, the day before the RNFB survey was conducted, resulting in relatively high stock levels for completion of the food price survey (CNP 2010a).

Nevertheless, several items in the RNFB survey guide were not available in the community during the period of data collection, including T-bone steak, frozen apple and orange juice, frozen carrots and broccoli and canned carrots. Prices for similar items were substituted as per RNFB survey guidelines; however, this sometimes resulted in differences of as much as several dollars. In most cases, the price difference between items was negligible, especially for non-perishable items such as frozen or canned fruit and vegetables.

In general, the RNFB prices in Split Lake are higher than those encountered in Gillam, but lower than in York Landing. The increased costs relative to Gillam are consistent with the community's more remote location and smaller market size. The improved prices relative to York Landing are consistent with the improved supply chain provided by the North West Company as part of a larger regional distribution network and the community's larger market size.

The comparison between Split Lake and York Landing is particularly interesting because the two communities are located across the lake from each other. All road access to York Landing goes through Split Lake. Residents of York Landing travel the 25 km distance to Split Lake by ferry in summer and by ice road in winter. Prices, therefore, are generally lower in Split Lake than in York Landing and many residents of York Landing cross the lake on a regular basis to do their shopping in Split Lake.

While prices in Split Lake were 17% more than prices in Thompson and 28% more than those in Winnipeg, they were about 5% less than prices across the lake in York Landing.

[1] According to the Keewatin Tribal Council website (2009).

3B.3.1.6 Gillam

The prices gathered in Gillam indicate the cost of supplying a smaller market with strong purchasing power that still enjoys good regular access by truck, bus, rail and air. With about 1,200 permanent residents, Gillam is among the larger markets in the Local Study Area, only slightly smaller than the largest First Nation partner community at Split Lake.

The Gillam Co-op is the primary source of groceries in the community. As a co-op store, a portion of its profits are returned to community members each year according to the amount of money each customer spends. In this way, profits remain in the community either through store re-investment or in the hands of co-op members. The co-op ownership structure also removes the incentive to raise prices too much, which might otherwise occur because of the lack of competition. Prices in Gillam are generally in the mid-range between Thompson and York Landing.

Prices in Gillam are also lower than prices in Split Lake despite being a smaller community. This price differential is likely because Gillam is accessible by more modes of transportation and community members have more purchasing power as a result of the community's close relationship with Manitoba Hydro. Both Gillam and Split Lake are accessible by road and have regularly scheduled bus service. Gillam, however, is also located on a rail line and features an airport with regularly scheduled flights. Manitoba Hydro is the town's primary employer, providing high-paying, secure jobs with strong benefits. The town's close relationship with Manitoba Hydro may also provide some additional supply chain benefits. Manitoba Hydro takes an active role in the operation of the town and is more likely to intervene so that basic household goods are available at reasonable prices.

Despite these factors, there is still a feeling among some Gillam residents that prices may be higher at the co-op than they need to be. For instance, one long-term resident stated that people tend to buy only what is necessary due to what they considered "the marked up prices" in the community (Gillam KPI Program 2009-2010).

Prices in Gillam are 12% more than in Thompson and 21% more than in Winnipeg. At the same time, prices in Gillam are 5% less than prices in Split Lake despite being a smaller market.

3B.3.1.7 Thompson

As a regional retail centre, Thompson offers the largest market in the Local Study Area. It is serviced by multiple large, national retail grocery chains with strong, active supply chains to provincial distribution centres such as Winnipeg. Data was collected in two grocery stores – Safeway and Extra Foods – both of which form part of large chains operating across Canada.

While prices in Thompson are influenced by its northern location and long distance from Winnipeg, they are also influenced by an additional factor not experienced to the same degree in other Local Study Area communities. The strong economy in Thompson is creating a labour shortage, causing wage inflation. Higher wages, in turn, push up the price of retail goods. Despite this additional factor, Thompson still features the lowest overall prices in the study region with a 9% premium over Winnipeg prices.

3B.3.1.8 Winnipeg

The Winnipeg data was collected at one medium-sized chain store, Family Foods, in late November 2009[1]. As expected, RNFB price calculations for Winnipeg were the lowest of all communities for which data was collected.

Some individual food categories, however, had higher costs in Winnipeg than in Thompson. These included dairy products, eggs, grain products, citrus fruit and fats and oils. In the cases of eggs and citrus fruit, Winnipeg prices were also higher than the Gillam prices. The higher prices among these categories may be related in part to the smaller size of the store and chain relative to those surveyed in Thompson. Peak seasons for produce may also be a factor – the lower citrus prices in June and July may reflect fruit that is closer to peak season and therefore more affordable.

3B.3.1.9 Variations of RNFB Essential Food Prices

Although the overall RNFB prices accurately reflect expected cost of living increases that occur in each community as a result of their size and accessibility, individual prices do not always follow accordingly. This is most apparent in the RNFB prices gathered in the First Nation communities.

In York Landing, prices are much higher than in Thompson and Winnipeg, especially for perishable items such as milk, yogurt and fresh carrots. Similarly, some canned and boxed products with a long shelf life, such as macaroni and cheese, apple juice and canned tomatoes, are much more expensive in York Landing than in Thompson and Winnipeg. Compared to other isolated communities, York Landing had the lowest prices for both apples and lean ground beef. York Landing also provided the lowest price for canola oil at 75% the cost in Winnipeg. In general, canola oil prices are less expensive in the smaller, more remote markets.

In Split Lake, prices generally follow the 17% premium over Thompson prices. Some products, however, including milk, lean ground beef and canned salmon are almost double the prices recorded in Thompson. Bananas were priced almost four times higher than in Thompson. At the same time, eggs, canola oil, canned corn, margarine, potatoes and apple juice were all less expensive in Split Lake than in Thompson.

3B.3.1.10 Cost of Non-Essential Foods

The RNFB survey also collects data on non-essential foods. While these items do not form part of the RNFB analysis for a number of reasons, most notably their nutritional content, they do form part of residents' regular consumption, especially where convenience items are among the few regularly stocked food products.

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[1]In Southern cities, RNFB procedure has been to collect data in only store for comparison to the data collected in all stores in northern communities. While RNFB documents on price selection suggest that collecting data from multiple stores in southern communities would be preferable in future, there is no indication that this procedure has been adopted and, as such InterGroup Consultants chose to follow the typical RNFB methodological guidelines. For further information, see RNFB 2008a.

While high prices for specialty items, such as infant formula and infant cereal, affect only a segment of the population, the difference in prices noted between communities would affect the cost of living for many households with children. These high prices can induce secondary effects on Valued Environmental Components such as community health if these high costs result in products being watered down to last longer or replaced with less expensive substitutes of lower nutritional value (see Boult 2004, for implications of nutritional deficiencies and prevalence of junk food in Northern Canada).

Another item that is sometimes necessary in isolated communities is bottled water, especially where potable water contamination prevents local water consumption or forces residents to boil their regular water supply. Although water prices per litre appear relatively low across the Local Study Area, prices in York Landing are twice those recorded in Gillam.

3B.3.1.11 Cost of Non-Food Household Items

The RNFB survey collects price data for some non-food household items and toiletries. Again, these products do not form a part of the RNFB analysis; however, the standard sizes and brands sought by the RNFB allow their prices to be compared directly between the communities.

The non-food product information collected includes items that are common to most households – toilet paper, facial tissue, toothpaste, and laundry detergent – as well as specialized items including feminine hygiene products and diapers. Prices are similar in Winnipeg and Thompson, with the total cost of these items in Winnipeg slightly higher than in Thompson. Several items, including toothpaste, toilet paper and facial tissues are also similar among the communities, while other items, including diapers and feminine hygiene products, provide more variation. In Split Lake, for example, prices for these seven items exceed Thompson and Winnipeg prices by about 77%, due mainly to the large price differences between diapers, feminine hygiene products and laundry detergent.

3B.3.2 EFFECTS ASSESSMENT: FOOD AND HOUSEHOLD ITEMS

The RNFB analysis shows that prices for food and household items vary between locations due to the costs of transporting goods to that location, the amount of overhead included in each product at each location and, in the case of Thompson, the availability and cost of labour in the community. Prices can also be affected by ownership structure and the nature of local competition, which may limit the amount a vendor can increase the selling price of a product. Spoilage and replacement costs also increase the price of perishable food items, particularly in remote communities with small populations, while non-perishable food prices tend to remain more constant across communities.

The following four main drivers appear to determine the cost of food and household items in communities within the Local Study Area:

- Remoteness (transportation);
- Size of market (overhead per product);

- Purchasing power of market (overhead per product); and
- Competition for labour (cost of labour).

In general, the Project will not affect the first two variables across the Local Study Area to any noticeable degree. No infrastructure is planned for any community that will affect accessibility and the size of any single market is not expected to change substantially as a result of the Project.

The purchasing power of residents across the Local Study Area, however, is likely to be affected by the Project through increased employment and business income. During the construction phase, the expected increase in employment and business income will likely result in increased disposable income for family Members living within the KCNs communities and in Gillam. Some of this purchasing power will be spent within local communities with the remainder likely to be spent in Thompson. Increases in spending could affect the cost of food and household items in two ways: 1) if current supply chains remain intact and there are no corresponding increases in supply, prices could increase as demand increases; 2) alternately, where supply chains are able to react, the cost of living could be reduced as stores are able to rely on more consistent and stable demand.

The Project will also result in increased levels of business activity. Since most Project supplies will be ordered from large-scale distributors located outside the Local Study Area, local business activity resulting from the Project will most likely be for small-scale equipment, tools and related gear, as well as for hospitality services at restaurants, hotels and taverns. The effect of this increase in business activity will therefore be felt primarily in Thompson. This may have a small, related effect on labour costs, which may put some upward pressure on the price of food and household items.

An increase in demand for labour is unlikely to directly affect the cost of food and household items because the labour pool for hydroelectric construction work is substantially different from the retail labour pool. Indirectly, the increased level of business activity within the Local Study Area, particularly in Thompson, may require businesses to offer higher wages to attract labour. This may translate into slightly higher costs for food and household items.

During the operations phase, the main effect of the Project will be felt in Gillam, which is expected to experience a population increase. Since these are longer-term jobs, the increased purchasing power the new jobs will bring to the community should help to stabilize demand and provide a more lucrative market for vendors. The result could be a slight reduction in prices or an increased selection of items for purchase.

One factor not accounted for in the RNFB analysis is the effect of country foods (fish and game, berries, nuts, and edible wild plants) on the total amount spent on food and household items by Local Study Area residents. Country food items are able to replace items in the RNFB survey document. Therefore, while the premiums outlined in this analysis will hold for each individual product purchased (subject to variation, as described) the total weekly amount paid by people living in remote communities will be offset to some degree by the presence of country foods in their diet. This effect is likely to be most pronounced in remote communities where food prices are most expensive and access to wildlife and other resources is most abundant.

Families of workers may experience a moderate cost of living increase because of a reduction of country foods in their diet, as time that was previously spent hunting and fishing may now be spent on the job site. However, this is not expected to affect the cost of individual items in the stores but rather, is consistent with a more general trend observed among indigenous peoples where economic development has resulted in decreases in traditional harvesting activities (Buell and Ajunnginiq Centre 2006).

There is also the possibility of an increase in the cost of living for other community residents if the presence of the Project affects the abundance of or access to country foods. In areas where traditional resource use is common, increased traffic, the creation of access roads and flooding effects of the Project may add stress to local ecosystems, potentially affecting resource harvesting and increasing local dependence on purchased foods. The Adverse Effects Agreements for the KCNs provide mitigation measures to address the anticipated effects on both communities. Mitigation measures include providing transportation and equipment to access other resource areas not currently in use. These measures are important because a traditional diet is generally considered to be the healthiest alternative for indigenous peoples (Myers *et al.* 2004).

3B.4 TRANSPORTATION

The Project will require a large workforce during the construction phase. While resources have been used to train a large local workforce, many workers will also be travelling from outside the Local Study Area to work on the Project. This will increase demand for local transportation to and from communities in the Local Study Area as well as within northern Manitoba in general. Increased demand may affect the cost of transportation for local residents, thereby increasing their cost of living. This section will examine the potential for transportation-related cost of living effects in more detail.

3B.4.1 AVAILABLE MODES OF TRANSPORTATION

Statistics Canada reports that 15.3% of total expenditures by Manitobans in 2007 were for transportation (Statistics Canada 2008a; Statistics Canada 2008b). Transportation to and between the Local Study Area communities generally consists of bus, rail and air service. (Table 3B-2) provides a summary of transportation options across the Local Study Area.

Table 3B-2: Summary of Transportation Access to Local Study Area Communities

Community[1,2]	Air	Bus	Rail	Road	Ferry	Winter Road
Ilford	Charter Only	n/a	●	None	None	●
Fox Lake (Bird)	None	None	●	●	n/a	n/a
York Landing	Scheduled Flights to Thompson	n/a	None	None	●	●
Split Lake	None	●	None	●	n/a	n/a

Source: Calm Air 2009; Perimeter Aviation 2010; Greyhound Canada 2009; MIT 2009; VIA Rail 2009.
Notes:

1. '●' denotes presence of that mode of transportation.
2. 'n/a' denotes 'not applicable' (*e.g.*, winter roads are not applicable in the case of Fox Lake (Bird) because it is already serviced by an all weather road).

3B.4.1.1 Air Service

Scheduled air travel in Local Study Area communities is provided by two regional airlines, Perimeter Aviation and Calm Air International. Calm Air offers scheduled flights between the communities of Thompson, Gillam, Churchill and Winnipeg. Flight prices range from $205 to $615 each way for the Winnipeg-Thompson run, and from $205 to $360 each way for the Gillam-Thompson route, plus applicable taxes and fees (Calm Air 2009).

Perimeter regularly services Thompson, York Landing and Winnipeg, with flight prices ranging from $105 each way between York Landing and Thompson to $335 each way between Winnipeg and Thompson, plus applicable taxes and fees (Perimeter Aviation 2010).

(Table 3B-3) and (Table 3B-4) show the number flights in and out of each community on a weekly basis. While many routes have several departures daily, making scheduled flight reasonably convenient for local residents, the price associated with flying between communities makes this form of transportation expensive to use on a regular basis. Several local residents referred to the high cost of airfare, expressing a desire for less expensive options. However, recent increases in the number of flights between communities have improved the price of airfare generally (Gillam KPI Program 2009-2010). In addition to scheduled flights between communities, charter flights are also available through Perimeter, Calm Air and Missinippi Airways (Thompson Airport 2009).

Table 3B-3: Weekly Calm Air Flights between Local Study Area Communities, 2009

Departures	Arrivals			
	Gillam	Churchill	Thompson	Winnipeg
Gillam	--	6	5	11
Churchill	6	--	5	18
Thompson	5	5	--	35
Winnipeg	14	18	35	--

Source: Calm Air 2009.

Table 3B-4: Weekly Perimeter Flights between Local Study Area Communities, 2009

Departures	Arrivals		
	York Landing	Thompson	Winnipeg
York Landing	--	10	--
Thompson	10	--	51
Winnipeg	--	51	--

Source: Perimeter Aviation 2010.
Notes:
- Thompson-Winnipeg route via Oxford House.

3B.4.1.2 Bus Service

Bus service in the Local Study Area is provided by Grey Goose Bus Lines, a subsidiary of Greyhound, servicing the communities of Thompson, Gillam, Split Lake and Winnipeg, as well as stopping at Long Spruce Junction where Provincial Roads 280 and 290 (PR280 and PR290) meet (Greyhound 2009). Bus service between Winnipeg and Thompson costs as much as the least expensive airfares offered between the cities, ranging from $210 to $235 each way, for a trip lasting over 18 hours (Greyhound 2009). In other Local Study Area communities, the price of bus service makes it a more accessible choice for local residents. Fares between Gillam and Thompson range from $90 to $100 each way for a four-hour trip, less than half the price of flights between the communities (Greyhound 2009). Similarly, bus fares from Split Lake to Thompson, an hour-and-a-half trip, range from $45 to $50 each way (Greyhound 2009). Nevertheless, the cost of bus fares between KCNs communities remains high, especially if required on a regular basis or for larger groups. In addition, when weather conditions make travel on the northern highways and roads difficult, inter-town bus service may not be a viable transportation option.

In mid-2009, Greyhound indicated that the company was considering stopping inter-town service throughout the province. Greyhound and the Province of Manitoba came to an agreement in late October 2009, which will see the company continuing to operate in the short term, with additional short-term support pledged in March 2010 (Government of Manitoba 2010a). However, it is important to note

the possibility that bus service could end or be reduced within the Local Study Area, eliminating an important mode of transportation between communities.

3B.4.1.3 Rail Service

Passenger rail service is provided by VIA Rail between Thompson, Ilford, Gillam, Fox Lake (Bird) and Churchill. Rail service is relatively inexpensive, even compared to bus travel, with round trip tickets ranging from $40 to $72 between communities and approximately $230 between Winnipeg and Thompson (VIA Rail 2009). Travel times, however, are somewhat longer than comparable bus trips. For example, the trip from Gillam to Thompson is more than six hours by train versus four hours by bus. Service is also much less frequent, with departures and arrivals only twice a week in each community. However, train passengers are allowed up to two pieces of carry-on baggage and three pieces of checked baggage for free, after which a small service fee applies (VIA Rail 2009). WLFN respondents noted that VIA Rail is inconsistent in keeping trains on schedule (CNP 2010f).

For local residents expecting to shop in one of the larger regional centres, passenger rail service is more economical and more practical for carrying parcels. With stops in Ilford and Bird, the train is also a more accessible option than other means of transportation for residents of those KCNs communities. Rail freight service is also provided up to three times each week along the Hudson Bay Railway from The Pas to Thompson, Ilford and Gillam.

3B.4.1.4 Roads and Highways

The Local Study Area is accessible by highway from the south along Provincial Trunk Highway 6 (PTH 6) from The Pas to Thompson. From Thompson, the communities of Split Lake and Gillam are accessible by PR280. York Landing is accessible by ferry, at no cost, across Split Lake during the summer months. Fox Lake (Bird) is accessible along PR290, which connects with PR280 near the bridge north of Gillam.

As a Provincial Trunk Highway, PTH6 is built to a relatively high standard and maintained well compared to other northern highways. Alternately, as Provincial Roads, the transportation connections between Thompson and Gillam, and beyond to Fox Lake (Bird), are generally rough and difficult to travel.

In winter, ice roads are constructed over frozen lakes, rivers and muskeg to provide temporary access to Ilford and York Landing. Ice roads can open as early as November, although are more often open only for a short period in late winter. During the 2008-2009 season, Manitoba's winter road system did not officially open until February 2, 2009, closing at the end of March after about seven weeks of operation (Service Canada 2009a). During that period, 2,500 shipments of staple items, such as fuel, groceries, construction materials and general freight were delivered to northern communities via the winter road system (Service Canada 2009a). Although travel is sometimes slow on the ice, the direct access provided

by winter roads is often more convenient and affordable than other modes of transportation such as air and rail[1].

In 2008-2009, the ferry between Split Lake and York Landing transported 8,286 passengers and 3,495 vehicles. Peak volumes since 1979 occurred the previous year, in 2007-2008, with 9,544 passengers and 3,607 vehicles (Manitoba Infrastructure and Transportation 2009). On average, the ferry has been operating at one-third capacity in recent years. No information is available on how often passengers are turned away during individual trips that reach capacity. (Table 3B-5) shows the average usage of the York Landing-Split Lake ferry in 2008.

Table 3B-5: Ferry Capacity York Landing to Split Lake in 2008

	Passengers	Vehicles
Capacity per trip	40	16
2007/08 average per trip	14.2	5.4
2007/08 average	35.5%	33.5%

Source: InterGroup Consultants based on MIT 2009.

The cost of transportation in the Local Study Area tends to include higher maintenance costs than urban centres to the south, where roads are better maintained. The colder northern climate is generally harder on vehicles. For people living outside Thompson, travel on the highway from Thompson to Gillam and on to Fox Lake (Bird) along icy roads is also very hard on vehicles. As one long-term resident remarked, the cost of replacing shocks on his van each year led him to purchase a new truck (Gillam KPI Program 2009-2010).

3B.4.1.5 Public Transportation

Public transportation throughout the Local Study Area has been discussed in previous sections. Within the community of Gillam, public transportation is provided by private taxi. In Thompson, public transportation is available both by taxi and by bus. The City of Thompson operates a single bus route across the city. Buses run every half hour from 7:30 am to 6:10 pm Monday to Thursday, from 7:30 am to 9:10 pm on Fridays and 11:00 am to 6:10 pm on Saturdays. There is no service on Sundays. Bus fare is $1.85 for adults, with monthly bus passes available at a cost of $68.40 (City of Thompson 2011). By comparison, in Winnipeg, bus fare is $2.40 for adults, with monthly bus passes available at a cost of $75.35 (City of Winnipeg 2011).

[1] The 2009-2010 season was even shorter than the previous year, with the full system officially opening on February 12, 2010 and closing on March 15, 2010 after a quick thaw (Government of Manitoba 2010b). Within a few weeks of the abrupt closure of winter roads, on March 30, 2010, the Province of Manitoba announced major infrastructure funding to construct several all-weather access roads in Northern Manitoba (Government of Manitoba 2010c).

3B.4.2 EFFECTS ASSESSMENT: TRANSPORTATION

There are four main effects of the Project on transportation:

1. Many workers are expected to be recruited from outside the Local Study Area. The Project will increase traffic on flights to Thompson and Gillam and on bus routes between the two communities.
2. Some workers will likely want to go into town on days off. The Project will increase bus and road traffic between the job site and the two regional centres at Gillam and Thompson.
3. A large number of KCNs workers are expected to be employed at the site. The Project will increase traffic between the KCNs communities and the job site.
4. KCNs employment is expected to increase family incomes among KCNs residents, which may increase the ability of KCNs residents to purchase items in Thompson. The Project is therefore expected to increase traffic between KCNs communities and Thompson.

Thompson and Gillam are the only communities with regularly scheduled flights to locations outside the Local Study Area. Since Thompson is more than 700 km north of Winnipeg, workers travelling to and from the Local Study Area are expected to fly into one of these destinations. Flights to Thompson are generally less expensive than flights to Gillam but require the additional time and expense of bus travel to Gillam before continuing to the job site.

Increased demand for bus and air travel has the potential to create either a positive or an adverse effect on transportation costs. The increase in demand may encourage carriers to increase prices for existing seats or increase capacity, thereby reducing costs through economies of scale. For example, recent increases to the number of flights between some northern communities have decreased flight prices according to some residents (Gillam KPI Program 2009-2010).

KCNs workers are more likely than other workers to travel to and from the site during their days off. This will increase demand for transportation between the site and these communities. The following analysis outlines the potential effects of workers travelling to the job site and additional visits by family members to Thompson.

Split Lake is accessible year-round by road. Travel by personal vehicle to the job site or Thompson will not result in any increase in transportation costs for other Split Lake residents.

Split Lake also receives regular bus service. As a large community that is expected to experience a high level of employment on the Project, there is a potential for workers to use the bus to travel to Gillam before being transported by Manitoba Hydro to the job site. Because of the limited number of seats generally offered through bus transport, there is potential for either a positive or an adverse effect on transportation costs for other residents of Split Lake as the increase in demand may encourage the carrier to increase prices for existing seats or to increase capacity, thereby reducing costs through economies of scale.

Fox Lake (Bird) is accessible year-round by road. Travel by personal vehicle to the job site or to Thompson for shopping and recreation will not result in any transportation cost increases for other

residents of Bird. Bird is also accessible by rail although general abundance of capacity on rail transport indicates that this is not expected to increase the cost of living for residents of Bird.

York Landing is accessible by road and ferry through the summer months, and while the ice road is in operation. Travel by road when this option is available is not expected to increase the transportation costs for other residents of York Landing. Workers, however, may wish to return to their community or need to leave quickly to work at the site during other periods. Other family members may also wish to travel to Thompson for shopping. In this case, residents will need to fly to Thompson with workers then proceed by bus or air to Gillam. Because of the limited number of seats generally offered through air transport and the small number of flights to York Landing, there is a potential for either a positive or an adverse effect on transportation costs for other York Landing residents. The increase in demand may also encourage the carrier to increase prices for existing seats or increase capacity, thereby reducing costs through economies of scale. The increased use of bus transport is not expected to be enough to affect the cost of transportation for other residents.

Ilford is also accessible when the ice road is in operation. During the remainder of the year, workers will need to use the railway to commute back to their community. Rail transport generally has sufficient excess capacity to handle the additional passengers that may use this mode of transport. Neither the increased road nor rail transportation is expected to increase the cost of transportation for other Ilford residents.

There is also a more general potential for the Project to affect the transportation costs of all northern Manitobans. Manitoba Public Insurance (MPI) annual vehicle licensing fees are consistent across the Local Study Area, so there is no variation among communities for licensing costs. However, MPI does vary premiums by region across the province, so any changes in claim rates resulting from the Project would have the potential to affect future premiums. This is unlikely to occur due to mitigation measures already planned for the Project, such as the on-site camp that limits the need for workers to commute to work, and the drug and alcohol policy that is designed to limit the opportunities for workers to drive in the region while impaired.

3B.5 HOUSING

The Project is expected to attract large numbers of workers to the Local Study Area. Some of these workers may be KCNs Members who will reside temporarily in their home First Nation on days off and between contracts. Some Aboriginal and non-Aboriginal workers may also bring family members who will establish permanent residences for the duration of each worker's contract. The increased business activity in the Local Study Area related to the Project may also attract other people and their families to capitalize on indirect employment and business opportunities. Therefore, the Project has the potential to affect the cost of living in both Aboriginal and non-Aboriginal communities across the Local Study Area as a result of increased demand for housing. This section will examine the potential for housing-related cost of living effects in more detail.

Housing costs accounted for about 24.7% of Manitobans' cost of living in 2007 (Statistics Canada 2008a; Statistics Canada 2008b). Housing in the Local Study Area falls into five broad and sometimes

overlapping, categories, including band-owned and subsidized homes; company-owned and subsidized homes; rental units; privately-owned homes; and public housing.

3B.5.1 HOUSING IN KCNs COMMUNITIES

Band-owned housing is available in First Nation communities and in some other communities in the Local Study Area. On most reserves, band-owned housing is offered at little or no cost, substantially reducing shelter costs for residents. This subsidy has an effect on cost of living for First Nation residents. For instance, the loss of this subsidy often contributes to the financial challenges of First Nations Members who choose to live in other communities (YFFN KPI Program 2009-2010).

In 2006, Fox Lake (Bird) registered 40 dwellings and Split Lake registered 370 dwellings. The community of Ilford registered 35 dwellings. In August 2009, Indian Northern Affairs Canada (INAC) and the Canada Mortgage and Housing Corporation (CMHC) announced plans to invest millions of dollars over the next two years in First Nation communities across the country. In Manitoba, 47 First Nations, including FLCN (Fox Lake (Bird), WLFN (Ilford) and TCN (Split Lake), will share in $13.9 million in funding from INAC to help service lots, construct new high-density multi-unit dwellings and undertake renovations to support the conversion of band-owned housing to private ownership (Government of Canada 2009). In addition to this direct First Nation funding, CMHC will receive $125 million to be used for the creation of new on-reserve housing, as well as $125 million for the renovation and repair of existing federally assisted on-reserve social housing (Government of Canada 2009).

3B.5.2 HOUSING IN GILLAM

Gillam has approximately 435 dwellings, according to 2006 census data. Ninety of these dwellings[1] are owned by their occupants and the remaining 345 rented. Some rentals are owned by FLCN although the majority are owned by Manitoba Hydro, which rents them to employees at subsidized rates as part of their compensation and benefits packages. All permanent employees of Manitoba Hydro are eligible for the corporate housing subsidy when stationed in Gillam, though they pay tax on the difference between the rent they pay and the fair market rent for the property. With several types of corporate housing available, subsidies provided by the company vary by position.

Bi-weekly rates range from $42.90 for apartments to $71.60 for "Basic plus 2" units. Employees with a garage are compensated with an additional $4.12 bi-weekly and all employees receiving subsidies are eligible for $1.03 bi-weekly for each major appliance in their home (including washer, dryer, fridge and stove). According to Manitoba Hydro, most employees residing in Gillam receive the "Basic plus 2" subsidy, with additional compensation for four appliances and a garage, for a total of $79.84 on a bi-weekly basis (Gillam KPI Program 2009-2010).

In addition, all Gillam employees receive a northern allowance, with various payment rates dependent on family status. For employees living with their dependents in Manitoba Hydro-subsidized corporate

[1] Census data for 2006 is incomplete for Fox Lake and Split Lake.

housing, the northern allowance provides an additional $181.01 bi-weekly (Manitoba Hydro, *pers. comm.* 2009). Manitoba Hydro employees living in Gillam expressed their satisfaction with the subsidized housing and lack of home repair and maintenance costs, citing improved quality of life and greater flexibility when it comes to their costs of living (Gillam KPI Program 2009-2010).

3B.5.3 HOUSING IN THOMPSON

According to the 2006 census, Thompson had approximately 4,810 housing units: 2,470 single-detached, semi-detached and attached houses, 420 row houses, 1,465 apartments and 465 moveable dwellings, such as trailers (Statistics Canada 2007). More recently, in February 2010, the Canada Post Corporation in the City of Thompson reported 3,509 single detached houses, town-houses, duplexes and mobile home units and 1,700 apartments in Thompson (Canada Post Corporation 2010). Despite having the largest stock in the Local Study Area, Thompson is currently experiencing a housing shortage. In the last few years, rental and affordable housing has become more difficult to find, former apartment complexes have been converted to condominiums and rents have increased.

Census data indicates 65 housing units were built between 2000 and 2006 (Statistics Canada 2002; Statistics Canada 2007a). Service Canada data indicates 26 new units were built in 2007 (Service Canada 2009b). CMHC data reveals that 51 units were built in 2008, although no new units had yet been started as of March 2009 (CMHC 2009; Service Canada 2009b). A multi-family student housing project for the University College of the North campus is expected to begin within the next few years (Service Canada 2009c). The City of Thompson is also working with WinCan Properties Ltd. to build up to 110 new homes in the Burntwood South subdivision by the end of 2011 (Service Canada 2009d). The agreement to begin the first phase of 19 homes was made in June 2008, however construction was postponed until summer 2010 (Service Canada 2009d).

While little investment has been made to build new housing units, larger investments are being made to upgrade existing units, particularly to convert existing rental apartments into condominiums for sale. In 2007, the Grey Wolf apartments were converted to condominiums (Service Canada 2009b) and an additional 400 apartment units are currently scheduled for conversion from rental apartments to condominiums, including the Princeton Towers and the Corayana Apartments (Service Canada 2009b). Prices for these units are expected to start at about $164,000 (Service Canada 2009b). As a result of these conversions, apartment vacancy rates continue to decline. Table 3B-6 illustrates the number of vacant apartments in Thompson compared to Winnipeg and Manitoba as at April 2009.

Table 3B-6: Apartment Units Vacant by Bedroom Type, April 2009

Number of Private Apartment Units Vacant and Universe In April 2009 by Bedroom Type										
Centre	Bachelor		1 Bedroom		2 Bedroom		3 Bedroom		TOTAL	
	Vacant	Total	Vacant	Total	Vacant	Total	Vacant	Total	Vacant	Total
Thompson	**[1]	50	0	497	2	825	0	27	3	1,399
Winnipeg	24	4,747	256	26,631	175	21,012	27	1,515	482	53,906
Manitoba[2]	25	4,929	268	28,664	182	24,374	28	1,631	503	59,598

Source: CMHC 2009.
Notes:
1. Data suppressed to protect confidentiality or data is not statistically reliable.
2. Manitoba data only includes centres with 10,000 residents or more.

As vacancy rates in the city have decreased, rental prices have increased. Table 3B-7 presents average apartment rental prices in Thompson compared to rent in Winnipeg and Manitoba for April 2008 and 2009. While rental prices in Thompson remain lower than the provincial average, except in the case of bachelor apartment rents, average prices rose nearly 9% between 2008 and 2009 versus an increase of less than 3.5% in Winnipeg and an increase of 3.75% in the province as a whole. According to the Residential Tenancy Act, owners of apartment facilities are given exemption from rent controls if they undertake major renovations to the property. As a result, many landlords have substantially increased rents following improvements. With the additional anticipated condominium conversions, monthly rental rates are likely to continue to increase and vacancy rates will probably remain low.

Table 3B-7: Apartment Average Rent by Bedroom Type, April 2008 and April 2009

Private Apartment Average Rent by Bedroom Type										
Centre	Bachelor		1 Bedroom		2 Bedroom		3 Bedroom		TOTAL	
	Apr-08	Apr-09	Apr-08	Apr-09	Apr-08	Apr-09	Apr-08	Apr-09	Apr-08	Apr-09
Thompson	$452	$474	$531	$577	$590	$639	$662	$688	$562	$611
Winnipeg	$453	$455	$492	$616	$746	$774	$906	$920	$648	$670
Manitoba[1]	$450	$453	$586	$610	$726	$757	$879	$905	$640	$664

Source: CMHC 2009.
Note:
1. Manitoba data only includes centres with 10,000 residents or more.

While the total number of housing units in Thompson has remained relatively constant over the last decade, increase in rental prices and trends toward converting low-cost apartments into condominiums is causing the housing-related cost of living in Thompson to rise quickly.

3B.5.4 EFFECTS ASSESSMENT – HOUSING

There are two main ways the Project could affect housing prices in the Local Study Area during the construction phase:

- Workers returning to the Local Study Area who require a residence away from the job site during days off and between contracts; and
- Workers who bring their families with them to the Local Study Area who require permanent residences for their families while they are living and working at the job site.

In the KCNs communities, the presence of subsidized housing currently limits the opportunity for an influx of workers to affect house-related costs of living. The current stock of housing is finite and the ability of workers and their families to take up residence in the communities during the construction phase of the Project will be limited by their ability to negotiate with the band council or existing residents who may have space in their homes.

Nearby Nisichawayasihk Cree Nation (Nelson House) has recently begun to charge rents for band housing (CBC News 2009). If KCNs communities adopt this approach, there could be more opportunity for the Project to affect the cost of living for other band residents.

Thompson is currently too expensive to be an attractive place for workers to secure a permanent residence to stay at between contracts. It would likely be more convenient for workers to travel to Winnipeg, or to their home if they live outside the Local Study Area, while waiting for work opportunities.

Workers may choose to move their families to Thompson while they are working at the job site to make it easier to spend time together during days off. While the total number of workers expected to do this is likely to be small as is their impact on the Thompson housing market. If Vale's plans to shut down their Thompson smelter and refinery proceeds, some housing is likely to become available in Thompson as workers affected by the closure leave to work elsewhere.

Gillam is unlikely to experience housing-related costs of living effects as a result of the Project. Most available rental units are controlled by Manitoba Hydro which only rents them to employees and there is little turnover among the remaining units in town. Therefore, there is virtually no supply to satisfy any increase in demand that results from the Project.

During the operations phase, Gillam is likely to experience a population increase. Manitoba Hydro is already preparing to build new rental units to accommodate the new staff and families that are expected to work at the facility.

3B.6 COMPARISON OF RESULTS TO PRICE INDEX DIFFERENTIAL

The Price Index Differential (PID) is calculated by the Treasury Board of Canada Secretariat and the National Joint Council as part of the Isolated Post Allowance (IPA) for four of the six communities within the Local Study Area: Gillam, Ilford, Split Lake and York Landing. Federal employees living and working in northern Manitoba communities are eligible for this allowance, should the cost of living in the community exceed the cost of living in Winnipeg by 15% or more. The PID index includes prices for the community of Ilford, which was not surveyed for the RNFB price calculations. However, the IPA index does not include the cost of housing or rent in any of the affected communities. In addition, Thompson is not included on the list, indicating that the cost of living in this community has not reached the 15% threshold according to PID calculations. Similarly, the PID has not been calculated specifically for Fox Lake (Bird), which is likely due to its proximity to the town of Gillam.

The PID index calculates price differentials using Winnipeg as a baseline – set at a value of 100 – with classification ranges corresponding to price increases by percentage over this baseline for a variety of goods and services. Products incorporated into the PID calculation include grocery items, household supplies and operations, household or tenant insurance premiums, transportation expenses, personal care supplies and services, pharmaceutical products (excluding prescription medications), entertainment supplies, rental of cable or satellite services, reading materials and tobacco and alcohol products. In total, approximately 250 items are used to calculate the PID[1] (National Joint Council 2009).

In general, the PID supports the findings of the RNFB survey. According to the PID, the cost of living in Split Lake is more than 20% higher than the cost of living in Winnipeg, followed by Gillam at 25%. The cost of living in Ilford is 30% more than in Winnipeg, and at York Landing the cost of living is 45% greater than in Winnipeg. PID indices are presented for each community in (Table 3B-8).

[1] For more information on the calculation of the PID and related federal indexes, see the Isolated Posts and Government Housing Directive documents hosted on the National Joint Council website 2010.

Table 3B-8: PID Index for Local Study Area Communities Effective August 2009

Location	Living Cost Differential[1]	Price Index Differential[2]
Split Lake[3]	2	120-124
Gillam	3	125-129
Ilford	4	130-134
York Landing	7	145-149

Source: National Joint Council 2009.
Notes:
1. The Living Cost Differential may be authorized at certain posts where abnormally high prices prevail. The LCD allowance becomes effective when the price of goods and services, as measured by Statistics Canada, reaches an index level of 115 or higher in relation to an index of 100 at the point of comparison. There are 16 LCD levels, reflecting 5-point ranges. Costs associated with shelter, clothing, furniture and vehicle purchases are not taken into consideration.
2. The Price Index Differentials are the actual 5-point ranges referred to by the LCD classification. The PID is measured in relation to a community of comparison, in the case of the Keeyask region this community of comparison is Winnipeg, which is given a comparative index of 100.
3. Split Lake is considered a Special Location, with federal employees paid a combined rate equal to the Living Cost Differential and the Fuel and Utilities Differential (which is paid at isolated posts where employees are required to pay for fuel and/or utility consumption directly to the supplier or indirectly through a portion of their rent).

There are some notable differences between the PID calculations and the results of the RNFB survey. The PID indicates that Gillam experiences a higher cost of living increase than Split Lake, despite Gillam's better access to transportation and greater purchasing power. The PID also applies a higher cost of living to York Landing than the RNFB results would suggest.

Although the PID index rates are slightly higher than the RNFB calculations and differ slightly for the communities of Gillam and York Landing, the differences are relatively small. Considering the much broader basket of goods included in the PID index, the large number of missing items from the York Landing RNFB survey, as well as the different time periods during which the RNFB surveys were undertaken, some differences were likely. Overall, both measurements serve to provide some perspective on the findings of the other.

3B.7 COST OF LIVING SUMMARY

There are three main drivers affecting the cost of living across the Local Study Area: the cost of food and household items, the cost of transportation and the cost of housing. In Manitoba, these three costs make up more than 50% of the total amount spent by families (Statistics Canada 2008a; Statistics Canada 2008b).

Within the Local Study Area, the results of the RNFB and other collected data indicate that the cost of food and household items are directly affected by the accessibility of a community. Residents of the most remote communities pay almost 40% more than people in Winnipeg and nearly 30% more than those living in Thompson for basic household goods. These costs are mitigated to some extent by the increased prevalence of country foods in remote communities.

Transportation costs are more difficult to quantify, although it is clear that transportation costs are higher for people living in remote communities. However, the small size of the community may reduce transportation costs such as fuel and annual licensing fees for those people who do not commute from their home community to other locations on a regular basis.

Housing costs are generally more affordable in the remote communities than in the regional centres. In the KCNs communities, most on-reserve housing is subsidized by the Federal Government, which reduces housing-related rental or purchase costs. The exception would be the case of Canadian Mortgage and Housing Corporation (CMHC) homes that are held by the community, with rent paid by the individuals living in them[1]. In Gillam, Manitoba Hydro subsidies reduce employee housing costs to a level well below the provincial average. Housing costs for non-Manitoba Hydro employees remain much more expensive. The highest housing costs are found in Thompson, which is currently experiencing a housing shortage with little housing construction on the horizon to absorb the growing demand. This is driving up the price of houses and apartments. It is also leading some apartment owners to convert apartments into condominiums in order to take advantage of the increased sale prices (Thompson KPI Program 2008-2010). This situation is likely to change given the announcement in November 2010 that Vale expects to close the nickel refinery and smelter by 2015.

Table 3B-9 provides a summary of the findings of this study alongside the federal PID indices.

[1] There are currently 188 CMHC funded homes at TCN (Split Lake); 29 at FLCN (Bird); 20 at WLFN (Ilford); and 18 at YFFN (York Landing) (FLCN KPI Program 2009-2011; CNP 2010c; CNP 2010f; YFFN KPI Program 2009-2010).

Table 3B-9: Cost of Living and Potential Effects Summary Table 2009

	Food & Household Items (RNFB)	Transportation	Housing	Price Index Differential (PID)
Thompson	9% above Winnipeg	Road / Bus / Rail / Air	Comparable to Winnipeg	<15%
Potential for effect	*Potential for Small, Short-Term Increase*	*No Effect, or Small Decrease Cost of Bus & Air*	*Potential for Small, Short-Term Increase*	
Gillam	12% above Thompson 21% above Winnipeg	Road / Bus / Rail / Air Higher than Thompson	Manitoba Hydro Subsidizes Most Homes	25-29%
Potential for effect	*No Effect, or Small Decrease to Costs*	*No Effect, or Small Decrease Cost of Bus & Air*	*No Effect*	
Split Lake (TCN)	17% above Thompson 28% above Winnipeg	Road / Bus Higher than Thompson	Subsidized by First Nation	20-24%
Potential for effect	*No Effect, or Small Decrease to Costs*	*No Effect, or Small Decrease Cost of Bus*	*No Effect*	
York Landing (YFFN)	28% above Thompson 39% above Winnipeg	Ice Road / Ferry / Air Expensive in spring & fall	Subsidized by First Nation	45-49%
Potential for effect	*No Effect, or Small Decrease to Costs*	*No Effect, or Small Decrease Cost of Air*	*No Effect*	
Fox Lake/Bird (FLCN)	n/a	Road / Rail Inconvenient but affordable	Subsidized by First Nation	n/a
Potential for effect	*No Effect, or Small Decrease to Costs*	*No Effect*	*No Effect*	

Table 3B-9: Cost of Living and Potential Effects Summary Table 2009

	Food & Household Items (RNFB)	Transportation	Housing	Price Index Differential (PID)
Ilford (WLFN)	n/a	Ice Road / Rail/ Air Charter Inconvenient but affordable	Subsidized by First Nation	30-34%
Potential for effect	*No Effect*	*No Effect*	*No Effect*	

APPENDIX 3C

ECONOMIC IMPACT ASSESSMENT

KEEYASK
Hydropower Limited Partnership

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Keeyask Generation Project

Economic Impact Assessment

Economic Analysis Department

November 2011

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1. Executive Summary

For the purpose of this economic impact assessment, all costs and assumptions associated with the Keeyask Infrastructure Project (KIP) are not included. The Keeyask generation project is a proposed 695-megawatt (MW) hydroelectric generating station at Gull Rapids on the lower Nelson River, immediately upstream of Stephens Lake in northern Manitoba. The project will take approximately eight years to construct. The project consists of principal structures and supporting infrastructure. The principal structures consist of a powerhouse complex, spillway, dams, and dykes. Supporting infrastructure consists of temporary facilities required to construct the principal structures and permanent facilities required to construct and operate the project. Temporary infrastructure consists of roads, borrow sources, a camp and work areas, cofferdams, an ice boom and boat docking and launching facilities.

Three new transmission lines, each approximately 38 km in length, will be required to transmit power from Keeyask to the Radisson Converter Station, where the power will enter Manitoba Hydro's integrated power system.

The Keeyask project includes:

- A 695-megawatt (MW) generating station. The capital cost is estimated to be $2,162 million (in 2010 dollars) to build. The annual operating and maintenance costs are estimated to be $5.7 million (in 2010 dollars).
- Three new transmission lines, each approximately 38 km in length. The capital costs are estimated to be $65.7 million (in 2010 dollars). The annual operating and maintenance costs are estimated to be approximately $122,000 (in 2010 dollars).
- A switching station with capital cost estimated to be $57.2 million (in 2010 dollars). The annual operating and maintenance costs are estimated to be $91,800 (in 2010 dollars).

The economic impact analysis does not include costs associated with the infrastructure project (KIP), sunk costs, interest and escalation during construction, costs associated with pre-project planning, design, and training, costs associated with environmental studies, any potential local development payments, and contingency costs.

The major economic benefit of the project is from construction. In total, the entire project construction expenditure is expected to contribute to **Manitoba** as follows:

- **9,170 person-years of direct and indirect employment,**
- **$653.8 million in labour income,**
- **$822.7 million in GDP,**
- **$422.6 million in tax revenue.**

Operating and maintaining the project is expected to contribute, on average, annually to **Manitoba** as follows:

- **77 person-years of direct and indirect employment,**
- **$6.2 million in labour income,**
- **$7.1 million in GDP,**
- **$31.5 million in tax revenue.**

In total, the entire project construction expenditure is expected to contribute to **all of Canada** as follows:

- **22,920 person-years of direct and indirect employment,**
- **$1,390.8 million in labour income,**
- **$1,901.6 million in GDP,**
- **$788.3 million in tax revenue.**

In total, operating and maintaining the project is expected to contribute, on average, annually to **all of Canada** as follows:

- **93 person-years of direct and indirect employment,**
- **$6.7 million in labour income,**
- **$7.8 million in GDP,**
- **$31.8 million in tax revenue.**

2. Introduction

The purpose of this document is to present the results of an economic impact analysis of the proposed Keeyask generating station and associated transmission infrastructure. The Keeyask project includes:

- A 695-megawatt (MW) hydroelectric generating station on the lower Nelson River, immediately upstream of Stephens Lake in Northern Manitoba. The capital cost is estimated to be $2,162 million (in 2010 dollars) to build. The annual operating and maintenance costs are estimated to be $5.7 million (in 2010 dollars).
- Three new transmission lines, each approximately 38 km in length. The capital costs are estimated to be $65.7 million (in 2010 dollars). The annual operating and maintenance costs are estimated to be approximately $122,000 (in 2010 dollars).
- A switching station with capital cost estimated to be $57.2 million (in 2010 dollars). The annual operating and maintenance costs are estimated to be approximately $91,800 (in 2010 dollars).

The economic impact analysis does not include sunk costs, interest, and escalation during construction, costs associated with pre-project planning, design, and training, costs associated with environmental studies, any potential local development payments, and contingency costs.

The economic impact analysis provides an estimate of the total employment impacts of the project on the economies of Manitoba and the rest of Canada. It also estimates the total Gross Domestic Product, tax revenue impacts, and labour income. It indicates not only the potential impacts generated directly by the project, but also the potential spin-off effects generated as a result of purchases on domestic goods and services and the local recirculation of increased income.

The economic impacts for the construction phase represent the estimated impacts for the entire construction period. The economic impacts for the operational phase are expressed on an annual basis.

Economic impacts have been calculated separately for construction and operational phases of the project. The analysis is based on construction, and operation and maintenance cost estimates available as of 2010. The construction and operating and maintenance cost estimates for the Keeyask generating station and associated transmission lines and switching station facilities may change as a result of further enhancements to the design. This may lead to changes in the economic impacts presented in this report.

While economic impact analysis can be a useful component in decision making, it does have some limitations. Economic impact analysis differs from socio-economic benefit-cost analysis in that it is a gross, rather than net, measure of benefits and it only considers the impact of project expenditures. It does not consider the opportunity cost of labour and capital in the project nor does it consider the revenue generated by the project. By itself, it cannot measure the profitability of the project. Thus, the results of this study should be treated as general estimates and never as absolutes.

3. Methodology

Assessing economic impacts of the construction and subsequent operation of the Keeyask project involves estimating (1) direct expenditures that would be made by entities within Manitoba or Canada, and (2) the secondary impacts that would be expected to result from these direct expenditures. The economic modelling framework used for estimating these economic impacts is the Manitoba Bureau of Statistics' Input-Output model. The model is based on statistical information about the flow of goods and services among various sectors of Manitoba's economy. In effect, it allows one to trace the demands placed on one industry resulting from increased activity in another. Thus the model provides estimates of direct, indirect, and induced impacts of the proposed Keeyask project on the economy of Manitoba or Canada. In summary, economic impact analysis refers to three different types of impacts:

- **Direct**. These are the impacts of the initial project expenditures.
- **Indirect.** These are the impacts that are created through increased sales for suppliers to the direct activity. For example, direct expenditures on transmission line towers will create an indirect increase in spending on transportation fuel and transportation repair services.
- **Induced**. These are impacts that are created by additional income and profits earned by workers and company owners associated with the project directly or indirectly. This additional income leads to more spending on food, housing, entertainment, transportation, and all of the other expenses that make up a typical household budget.

In determining the economic impact, there are two major purchasing categories considered: local purchases and non-local purchases. Non-local purchases represent a leakage or loss to a local economy.

The results of economic impact analysis are reported with the following data:

- **Employment.** This is a straightforward measure of the number of person-years of employment (full-time job equivalents) that are generated by the project, including direct employment, indirect employment with suppliers to the main project, and induced employment that is associated with the extra spending by households.
- **Labour Income.** This is the additional income earned by workers as a result of the project.
- **Gross Domestic Product (GDP).** Also referred to as "value-added," GDP represents the additional value of production that is generated by the project after removing the cost of intermediate inputs. For the purpose of this analysis, GDP at market price is reported. GDP at market price is a measure of the total value of goods and services produced in the economy.
- **Tax Revenue.** Tax revenue is calculated for all three levels of government – federal, provincial, and local.

Key economic impacts resulting from the Keeyask project are presented in the sections that follow. The construction phase impacts indicate the cumulative employment, labour income, GDP, and tax revenue impacts generated over the entire construction period. The operation and maintenance phase impacts indicate the annual impacts generated for a typical year of operation when the project is at full production.

4. Potential Economic Impacts on Manitoba

4.1 Construction Phase

Total expenditures during the construction phase are estimated to be $2,285 million. Of the total, $999.3 million is estimated to be spent outside the province. The majority, $1,285.8 million, is estimated to be spent within the province and is estimated to yield the impacts set out in Table 1 and Figure 1.

Table 1

Economic Impact on Manitoba – Construction Phase[1], [2]

	Construction Phase			
	Generating Station	**Transmission Line**	**Switching Station**	**Total**
Employment (person-years)[3]				
Project Direct[4]	2,460[5]	45	60	2,565
Other Direct[6]	2,280	240	55	2,575
Indirect and Induced[7]	3,640	295	105	4,040
Total Employment (person-years)	**8,370**	**580**	**220**	**9,170**
Labour Income ($ millions)[8]	**$604.5**	**$31.6**	**$17.7**	**$653.8**
GDP ($ millions)[9]	**$755.6**	**$42.4**	**$24.7**	**$822.7**
Tax Revenues ($ millions)[10]				
Provincial	$182.3	$ 6.6	$ 5.2	$194.1
Local	$ 25.4	$ 1.5	$ 0.7	$ 27.6
Federal	$187.9	$ 7.6	$ 5.4	$200.9
Total Tax Revenue ($ millions)	**$395.5**	**$15.7**	**$11.4**	**$422.6**

Note 1: Figures may not add to total, due to rounding.

Note 2: In 2010 dollars.

Note 3: Employment impacts are in "person-years." A person-year is defined as one person being fully employed for one year.

Note 4: On-site direct employment of Manitoba Hydro (including incremental Manitoba Hydro off-site employees) and contractor employees which is directly generated by the project.

Note 5: Total on-site direct employment of contractor and Manitoba Hydro employees is estimated to be 4,218 person-years. Off-site incremental employment of Manitoba Hydro employees is estimated to be 259 person-years.

Note 6: Employment of suppliers to support the main project and other jobs created by additional spending by households.

Note 7: Indirect employment refers to the employment of people who supply raw materials, equipment, or services to the initial direct suppliers to the project.

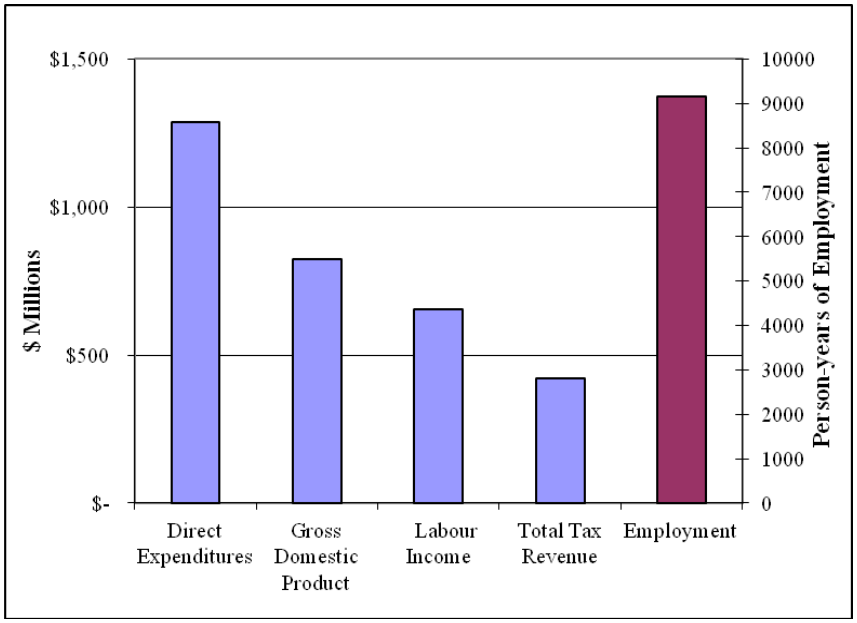
Note 8: Labour income is the sum of wages, supplementary labour income, and net income of unincorporated business. Any or all of these may be present in the direct expenditures and resultant direct, indirect, and induced impacts.

Note 9: GDP at market price is the total value of goods and services produced in Manitoba's economy.

Note 10: Tax revenue estimates are based on 2009-10 Manitoba Budget and 2006 income tax data adjusted to 2010 rates.

Figure 1

Economic Impact on Manitoba – Construction Phase



4.1.1 Employment

Total provincial employment impacts from the construction phase of the Keeyask generating station and associated transmission infrastructure are estimated at 9,170 person-years. This represents about 0.2% of the total number of full time employees in Manitoba's construction industry in 2010. For every $1 million direct capital expenditure in Manitoba, the Keeyask project is expected to generate 7.1 person-years of employment.

4.1.2 Labour Income

The total provincial labour income impacts from the construction phase of the Keeyask generating station and associated transmission infrastructure are estimated at $653.8 million. This represents about 0.4% of total labour income of full time employees in Manitoba's construction industry in 2010. For every $1 million direct capital expenditure in Manitoba, labour income impact in the province is estimated at $0.5 million for the Keeyask project.

4.1.3 Gross Domestic Product

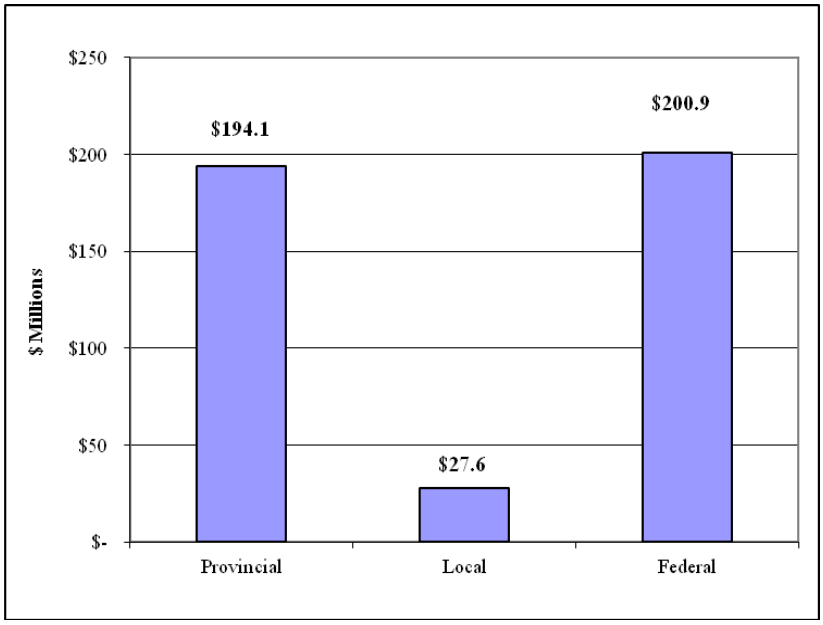
Total provincial impacts due to GDP at market prices from the construction phase of the Keeyask generating station and associated transmission infrastructure are estimated at $822.7 million. For every $1 million direct capital expenditure in Manitoba, the GDP impact in the province is estimated at $0.6 million for the Keeyask project.

4.1.4 Tax Revenue

Provincial, local, and federal tax revenues generated in Manitoba are estimated at $422.6 million from the construction of the Keeyask generating station and associated transmission facilities. As shown in Figure 2, this is comprised of $194.1 million in provincial, $27.6 million in local, and $200.9 million in federal taxes. For every $1 million direct capital expenditure in Manitoba, the tax revenue impacts are estimated at $0.15 million at the provincial, $0.02 million at the local, and $0.16 million at the federal levels for the Keeyask project.

Figure 2

Tax Revenue – Construction Phase



4.2 Operational Phase

Average annual expenditures during the operational phase are estimated at $5.9 million.* Approximately ninety-nine per cent (99%) of the total annual expenditures are assumed to be direct expenditures in Manitoba. Table 2 and Figure 3 provide the detailed economic impacts.

Table 2

Economic Impact on Manitoba – Operational Phase(1), (2)

	Operations – Per Year			
	Generating Station	**Transmission Line**	**Switching Station**	**Total**
Employment (person-years)(3)				
Project Direct(4)	46	0.7	0.5	47.2
Other Direct(5)	0	0.1	0.1	0.2
Indirect and Induced(6)	30	0.4	0.4	30.8
Total Employment (person-years)	**76**	**1.2**	**1.0**	**78.2**
Labour Income ($ 000s)(7)	**$6,000**	**$85.3**	**$73.7**	**$6,159.0**
GDP ($ 000s)(8)	**$6,900**	**$101.6**	**$85.3**	**$7,086.9**
Tax Revenues ($ 000s)(9)				
Provincial(10)	$29,410	$448.5	$301.4	$30,159.6
Local	$ 230	$ 3.4	$ 2.9	$ 236.3
Federal	$ 1,110	$ 16.8	$ 14.2	$ 1,141.0
Total Tax Revenue ($ 000s)	**$30,750**	**$468.7**	**$318.5**	**$31,536.9**

Note 1: Figures may not add to total, due to rounding.

Note 2: In 2010 dollars.

Note 3: Employment impacts are in "person-years." A person-year is defined as one person being fully employed for one year.

Note 4: On-site direct employment at the plant and in Gillam which is directly generated by the project.

Note 5: Employment of suppliers to support the main project and other jobs created by additional spending by households.

Note 6: Indirect employment refers to the employment of people who supply raw materials, equipment, or services to the initial direct suppliers to the project.

Note 7: Labour income is the sum of wages, supplementary labour income, and net income of unincorporated business. Any or all of these may be present in the direct expenditures and resultant direct, indirect, and induced impacts.

Note 8: GDP at market price is the total value of goods and services produced in Manitoba's economy.

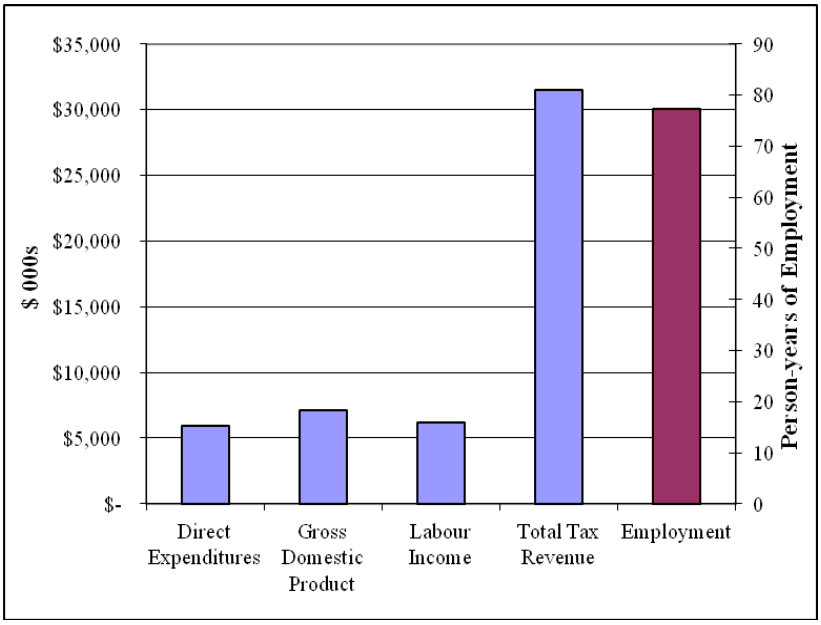
Note 9: Tax revenue estimates are based on 2009-10 Manitoba Budget and 2006 income tax data adjusted to 2010 rates.

Note 10: Estimates associated with annual corporation capital tax revenue and annual water rental payments are included in the provincial tax revenues.

*Annual expenditure estimates are based on average costs over the past four years at Kettle and Long Spruce.

Figure 3

Economic Impact on Manitoba – Operational Phase



4.3 Summary of Manitoba Economic Impacts

Table 3 provides the overall impacts of the Keeyask project in Manitoba.

Table 3

Manitoba Economic Impacts of the Keeyask Project[1, 2]

	Generating Station		Transmission Lines		Switching Station		Total	
	Const. (total)	O&M (per year)	Const. (total)	O&M (per year)	Const. (total)	O&M (per year)	Const. (total)	O&M (per year)
Employment (person-years)[3]								
Project Direct[4]	2,460[5]	46[6]	45	0.7	60	0.5	2,565	47.2
Other Direct[7]	2,280	0	240	0.1	55	0.1	2,575	0.2
Indirect and Induced[8]	3,640	30	295	0.4	105	0.4	4,040	30.8
Total Employment (person-years)	**8,370**	**76**	**580**	**1.2**	**220**	**1.0**	**9,170**	**78.2**
Labour Income ($ 000s)[9]	**$604,500**	**$6,000**	**$31,600**	**$85.3**	**$17,700**	**$73.7**	**$653,800**	**$6,159.0**
GDP ($ 000s)[10]	**$755,600**	**$6,900**	**$42,400**	**$101.6**	**$24,700**	**$85.3**	**$822,700**	**$7,086.9**
Tax Revenues ($ 000s)[11								
Provincial[12]	$182,300	$29,410	$ 6,600	$448.5	$ 5,200	$301.4	$194,100	$30,159.6
Local	$ 25,400	$ 230	$ 1,500	$ 3.4	$ 700	$ 2.9	$ 27,600	$ 236.3
Federal	$187,900	$ 1,110	$ 7,600	$ 16.8	$ 5,400	$ 14.2	$200,900	$ 1,141.0
Total Tax Revenue ($ 000s)	**$395,500**	**$30,750**	**$15,700**	**$468.7**	**$11,400**	**$318.5**	**$422,600**	**$31,536.9**

Note 1: Figures may not add to total, due to rounding.

Note 2: In 2010 dollars.

Note 3: Employment impacts are in "person-years." A person-year is defined as one person being fully employed for one year.

Note 4: On-site direct employment of Manitoba Hydro (including incremental Manitoba Hydro off-site employees) and contractor employees which is directly generated by the project.

Note 5: Total on-site direct employment of contractor and Manitoba Hydro employees is estimated to be 4,218 person-years. Off-site incremental employment of Manitoba Hydro employees is estimated to be 259 person-years.

Note 6: On-site direct employment at the plant and in Gillam which is directly generated by the project.

Note 7: Employment of suppliers to support the main project and other jobs created by additional spending by households.

Note 8: Indirect employment refers to the employment of people who supply raw materials, equipment, or services to the initial direct suppliers to the project.

Note 9: Labour income is the sum of wages, supplementary labour income, and net income of unincorporated business. Any or all of these may be present in the direct expenditures and resultant direct, indirect, and induced impacts.

Note 10: GDP at market price is the total value of goods and services produced in Manitoba's economy.

Note 11: Tax revenue estimates are based on 2009-10 Manitoba Budget and 2006 income tax data adjusted to 2010 rates.

Note 12: Estimates associated with annual corporation capital tax revenue and annual water rental payments are included in the provincial tax revenues.

5. Potential Economic Impacts to Rest of Canada

5.1 Construction Phase

During the construction phase $752.1 million is estimated to be spent in the Rest of Canada, outside Manitoba, and is estimated to yield the impacts set out in Table 4 and Figure 4.

Table 4

Economic Impact on Rest of Canada – Construction Phase[1], [2]

	Construction Phase			
	Generating Station	Transmission Line	Switching Station	Total
Employment (person-years)[3]				
Project Direct[4]	**2,010**	**0**	**0**	**2,010**
Other Direct[5]	**3,120**	**95**	**50**	**3,265**
Indirect and Induced[6]	**8,100**	**245**	**130**	**8,475**
Total Employment (person-years)	**13,230**	**340**	**180**	**13,750**
Labour Income ($ millions)[7]	**$717.6**	**$12.3**	**$7.0**	**$736.9**
GDP ($ millions)[8]	**$1,046.7**	**$19.4**	**$12.8**	**$1,078.9**
Tax Revenues ($ millions)[9]				
Provincial	**$145.6**	**$2.5**	**$1.6**	**$149.7**
Local	**$ 34.9**	**$0.6**	**$0.4**	**$ 35.9**
Federal	**$175.0**	**$3.0**	**$2.0**	**$180.0**
Total Tax Revenue ($ millions)	**$ 355.5**	**$6.1**	**$4.0**	**$365.6**

Note 1: Figures may not add to total, due to rounding.

Note 2: In 2010 dollars.

Note 3: Employment impacts are in "person-years." A person-year is defined as one person being fully employed for one year.

Note 4: Direct employment related to direct suppliers (i.e., contractors) from outside Manitoba.

Note 5: Employment of suppliers to support the main project and other jobs created by additional spending by households.

Note 6: Indirect employment refers to the employment of people who supply raw materials, equipment, or services to the initial direct suppliers to the project.

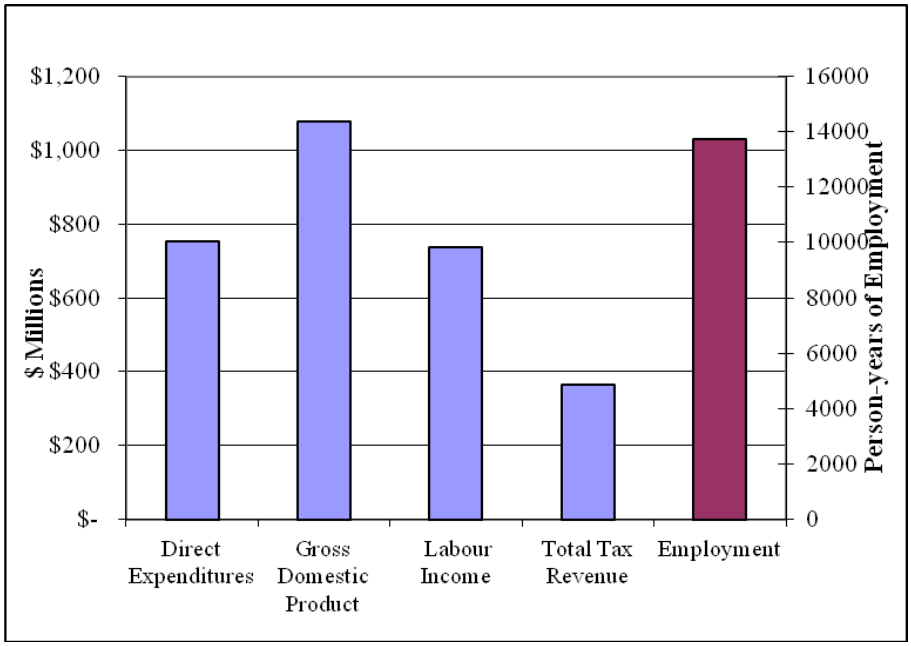
Note 7: Labour income is the sum of wages, supplementary labour income, and net income of unincorporated business. Any or all of these may be present in the direct expenditures and resultant direct, indirect, and induced impacts.

Note 8: GDP at market price is the total value of goods and services produced in Manitoba's economy.

Note 9: Tax revenue estimates are based on 2009-10 Manitoba Budget and 2006 income tax data adjusted to 2010 rates.

Figure 4

Economic Impact on Rest of Canada – Construction Phase



5.2 Operational Phase

During the operations and maintenance phase, annual average expenditures of $2,500 are estimated to be spent in the Rest of Canada, outside Manitoba, and are estimated to yield the impacts set out in Table 5 and Figure 5.

Table 5

Economic Impact on Rest of Canada – Operational Phase[1], [2]

	Operations – Per Year			
	Generating Station	**Transmission Line**	**Switching Station**	**Total**
Employment (person-years)[3]				
Project Direct[4]	0	0.0	0	0.0
Other Direct[5]	0	0.0	0	0.0
Indirect and Induced[6]	15	0.2	0.2	15.0
Total Employment (person-years)	**15**	**0.3**	**0.2**	**15.5**
Labour Income ($ 000s)[7]	**$400**	**$8.7**	**$4.4**	**$413.1**
GDP ($ 000s)[8]	**$700**	**$18.0**	**$8.2**	**$726.2**
Tax Revenues ($ 000s)[9]				
Provincial	$100.0	$2.4	$1.1	$103.5
Local	$ 20.0	$0.6	$0.3	$ 20.9
Federal	$120.0	$2.8	$1.3	$124.1
Total Tax Revenue ($ 000s)	**$250.0**	**$5.7**	**$2.7**	**$258.4**

Note 1: Figures may not add to total, due to rounding.

Note 2: In 2010 dollars.

Note 3: Employment impacts are in "person-years." A person-year is defined as one person being fully employed for one year.

Note 4: Direct employment related to direct suppliers (i.e., contractors) from outside Manitoba.

Note 5: Employment of suppliers to support the main project and other jobs created by additional spending by households.

Note 6: Indirect employment refers to the employment of people who supply raw materials, equipment, or services to the initial direct suppliers to the project.

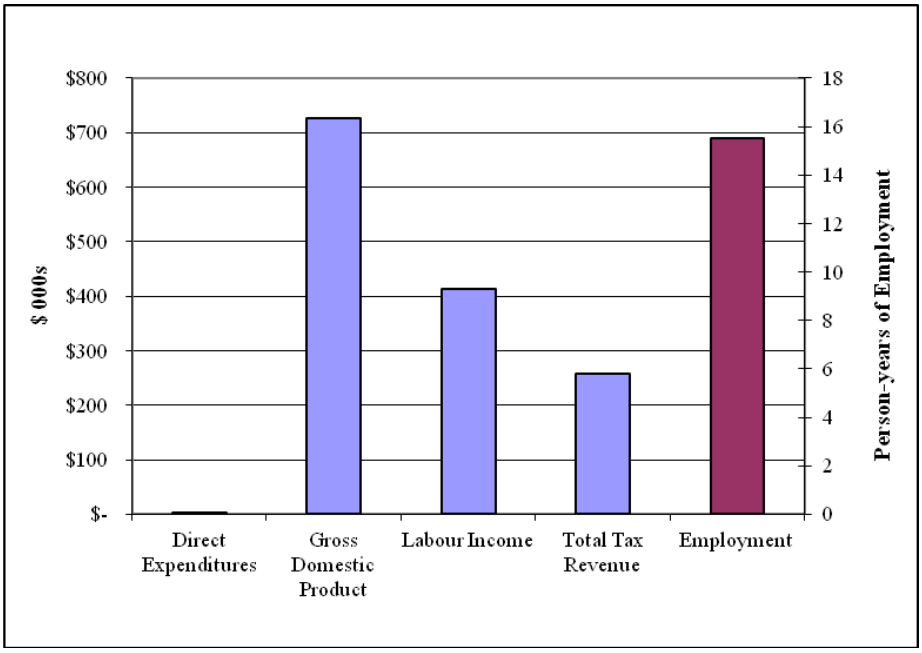
Note 7: Labour income is the sum of wages, supplementary labour income, and net income of unincorporated business. Any or all of these may be present in the direct expenditures and resultant direct, indirect, and induced impacts.

Note 8: GDP at market price is the total value of goods and services produced in Manitoba's economy.

Note 9: Tax revenue estimates are based on 2009-10 Manitoba Budget and 2006 income tax data adjusted to 2010 rates.

Figure 5

Economic Impact on Rest of Canada – Operational Phase



5.3 Summary of Economic Impacts to the Rest of Canada

Table 6 provides the overall impacts of the Keeyask project to the Rest of Canada.

Table 6

Rest of Canada Economic Impacts of the Keeyask Project[1], [2]

	Generating Station		Transmission Lines		Switching Station		Total	
	Const. (total)	**O&M (total)**	**Const. (total)**	**O&M (total)**	**Const. (per year)**	**O&M (total)**	**Const. (per year)**	**O&M (total)**
Employment (person-years)[3]								
Project Direct[4]	2,010	0	0	0.0	0	0	2,010	0.0
Other Direct[5]	3,120	0	95	0.0	50	0	3,265	0.0
Indirect and Induced[6]	8,100	15	245	0.2	130	0.2	8,475	15.0
Total Employment (person-years)	**13,230**	**15**	**340**	**0.3**	**180**	**0.2**	**13,750**	**15.5**
Labour Income ($ 000s)[7]	**$717,600**	**$400**	**$12,300**	**$8.7**	**$7,000**	**$4.4**	**$736,900**	**$413.1**
GDP ($ 000s)[8]	**$1,046,700**	**$700**	**$19,400**	**$18.0**	**$12,800**	**$8.2**	**$1,078.900**	**$726.2**
Tax Revenues ($ 000s)[9]								
Provincial	$145,600	$100	$2,500	$2.4	$1,600	$1.1	$149,700	$103.5
Local	$ 34,900	$ 20	$ 600	$0.6	$ 400	$0.3	$ 35,900	$ 20.9
Federal	$175,000	$120	$3,000	$2.8	$2,000	$1.3	$180,000	$124.1
Total Tax Revenue ($ 000s)	**$355,500**	**$250**	**$6,100**	**$5.7**	**$4,000**	**$2.7**	**$365,600**	**$258.4**

Note 1: Figures may not add to total, due to rounding.

Note 2: In 2010 dollars.

Note 3: Employment impacts are in "person-years." A person-year is defined as one person being fully employed for one year.

Note 4: Direct employment related to direct suppliers (i.e., contractors) from outside Manitoba.

Note 5: Employment of suppliers to support the main project and other jobs created by additional spending by households.

Note 6: Indirect employment refers to the employment of people who supply raw materials, equipment, or services to the initial direct suppliers to the project.

Note 7: Labour income is the sum of wages, supplementary labour income, and net income of unincorporated business. Any or all of these may be present in the direct expenditures and resultant direct, indirect, and induced impacts.

Note 8: GDP at market price is the total value of goods and services produced in Manitoba's economy.

Note 9: Tax revenue estimates are based on 2009-10 Manitoba Budget and 2006 income tax data adjusted to 2010 rates.

6. Potential Economic Impacts to All of Canada

6.1 Construction Phase

During the construction phase, the project is expected to contribute to all of Canada as provided in Table 7 and Figure 6.

Table 7

Economic Impact on all of Canada – Construction Phase[1], [2]

	Construction Phase			
	Generating Station	**Transmission Line**	**Switching Station**	**Total**
Employment (person-years)[3]				
Project Direct[4]	4,480[5]	45	60	4,585
Other Direct[6]	5,390	335	105	5,830
Indirect and Induced[7]	11,730	540	235	12,505
Total Employment (person-years)	**21,600**	**920**	**400**	**22,920**
Labour Income ($ millions)[8]	**$1,322.1**	**$44.0**	**$24.7**	**$1,390.8**
GDP ($ millions)[9]	**$1,802.3**	**$61.8**	**$37.5**	**$1,901.6**
Tax Revenues ($ millions)[10]				
Provincial	$327.9	$ 9.1	$ 6.8	$343.8
Local	$ 60.3	$ 2.1	$ 1.1	$ 63.5
Federal	$362.9	$10.6	$ 7.4	$380.9
Total Tax Revenue ($ millions)	**$751.1**	**$21.8**	**$15.4**	**$788.3**

Note 1: Figures may not add to total, due to rounding.

Note 2: In 2010 dollars.

Note 3: Employment impacts are in "person-years." A person-year is defined as one person being fully employed for one year.

Note 4: On-site direct employment of Manitoba Hydro and contractor employees. Direct employment related to direct suppliers (i.e., contractors) from outside Manitoba.

Note 5: Total on-site direct employment of contractor and Manitoba Hydro employees is estimated to be 4,218 person-years. Off-site incremental employment of Manitoba Hydro employees is estimated to be 259 person-years.

Note 6: Employment of suppliers to support the main project and other jobs created by additional spending by households.

Note 7: Indirect employment refers to the employment of people who supply raw materials, equipment, or services to the initial direct suppliers to the project.

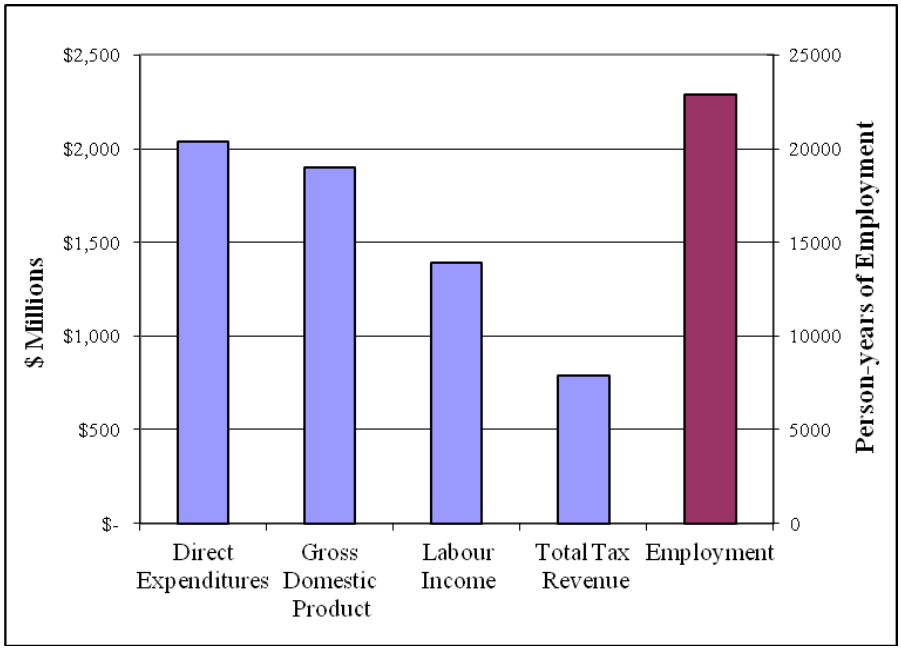
Note 8: Labour income is the sum of wages, supplementary labour income, and net income of unincorporated business. Any or all of these may be present in the direct expenditures and resultant direct, indirect, and induced impacts.

Note 9: GDP at market price is the total value of goods and services produced in Manitoba's economy.

Note 10: Tax revenue estimates are based on 2009-10 Manitoba Budget and 2006 income tax data adjusted to 2010 rates.

Figure 6

Economic Impact on all of Canada – Construction Phase



6.2 Operational Phase

During the operations and maintenance phase, the entire project is expected to contribute annually to Canada as provided in Table 8 and Figure 7.

Table 8

Economic Impact on all of Canada – Operational Phase[1], [2]

	Operations – Per Year			
	Generating Station	**Transmission Line**	**Switching Station**	**Total**
Employment (person-years)[3]				
Project Direct[4]	46	0.7	0.5	47.2
Other Direct[5]	0	0.1	0.1	0.2
Indirect and Induced[6]	45	0.7	0.5	46.2
Total Employment (person-years)	**91**	**1.5**	**1.1**	**93.6**
Labour Income ($ 000s)[7]	**$6,500**	**$94.0**	**$78.1**	**$6,672.1**
GDP ($ 000s)[8]	**$7,600**	**$119.6**	**$93.5**	**$7,813.1**
Tax Revenues ($ 000s)[9]				
Provincial	$29,510	$450.9	$302.5	$30,263.1
Local	$ 250	$ 4.0	$ 3.1	$ 257.1
Federal	$ 1,230	$ 19.6	$ 15.5	$ 1,265.1
Total Tax Revenue ($ 000s)	**$31,000**	**$474.4**	**$321.2**	**$31,795.3**

Note 1: Figures may not add to total, due to rounding.

Note 2: In 2010 dollars.

Note 3: Employment impacts are in "person-years." A person-year is defined as one person being fully employed for one year.

Note 4: On-site direct employment at the plant and in Gillam which is directly generated by the project.

Note 5: Employment of suppliers to support the main project and other jobs created by additional spending by households.

Note 6: Indirect employment refers to the employment of people who supply raw materials, equipment, or services to the initial direct suppliers to the project.

Note 7: Labour income is the sum of wages, supplementary labour income, and net income of unincorporated business. Any or all of these may be present in the direct expenditures and resultant direct, indirect, and induced impacts.

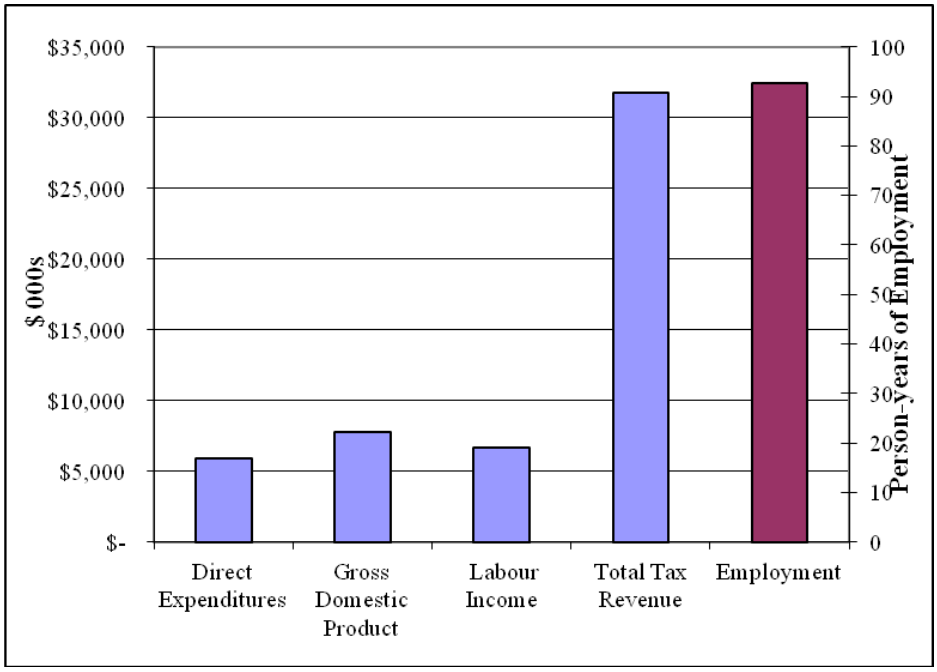
Note 8: GDP at market price is the total value of goods and services produced in Manitoba's economy.

Note 9: Tax revenue estimates are based on 2009-10 Manitoba Budget and 2006 income tax data adjusted to 2010 rates.

Note 10: Estimates associated with annual corporation capital tax revenue and annual water rental payments are included in the provincial tax revenues.

Figure 7

Economic Impact on all of Canada – Operational Phase



6.3 Summary of Economic Impacts to All of Canada

Table 9 provides the overall impacts of the Keeyask project in all of Canada.

Table 9

Canada Economic Impacts of the Keeyask Project[1, 2]

	Generating Station		Transmission Lines		Switching Station		Total	
	Const. (total)	**O&M (per year)**	**Const. (total)**	**O&M (per year)**	**Const. (total)**	**O&M (per year)**	**Const. (total)**	**O&M (per year)**
Employment (person-years)[3]								
Project Direct[4]	4,480[5]	46[6]	45	0.7	60	0.5	4,585	47.2
Other Direct[7]	5,390	0	335	0.1	105	0.1	5,830	0.2
Indirect and Induced[8]	11,730	45	540	0.7	235	0.5	12,505	46.2
Total Employment (person-years)	**21,600**	**91**	**920**	**1.5**	**400**	**1.1**	**22,920**	**93.6**
Labour Income ($ 000s)[9]	**$1,322,100**	**$6,500**	**$44,000**	**$94.0**	**$24,700**	**$78.1**	**$1,390,800**	**$6,672.1**
GDP ($ 000s)[10]	**$1,802,300**	**$7,600**	**$61,800**	**$119.6**	**$37,500**	**$93.5**	**$1,901,600**	**$7,813.1**
Tax Revenues ($ 000s)[11]								
Provincial[12]	$327,900	$29,510	$ 9,100	$450.9	$ 6,800	$302.5	$343,800	$30,263.1
Local	$ 60,300	$ 250	$ 2,100	$ 4.0	$ 1,100	$ 3.1	$ 63,500	$ 257.1
Federal	$362,900	$ 1,230	$10,600	$ 19.6	$ 7,400	$ 15.5	$380,900	$ 1,265.1
Total Tax Revenue ($ 000s)	**$751,100**	**$31,000**	**$21,800**	**$474.4**	**$15,400**	**$321.2**	**$788,300**	**$31,795.3**

Note 1: Figures may not add to total, due to rounding.

Note 2: In 2010 dollars.

Note 3: Employment impacts are in "person-years." A person-year is defined as one person being fully employed for one year.

Note 4: On-site direct employment of Manitoba Hydro (including incremental Manitoba Hydro off-site employees) and contractor employees which is directly generated by the project.

Note 5: Total on-site direct employment of contractor and Manitoba Hydro employees is estimated to be 4,218 person-years. Off-site incremental employment of Manitoba Hydro employees is estimated to be 259 person-years.

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