
WUSKWATIM GENERATION PROJECT

ENVIRONMENTAL IMPACT STATEMENT

**Manitoba Hydro
and
Nisichawayasihk Cree Nation**

April 2003

**Volume 8
Socio-Economic Environment**



Available in accessible formats upon request.

PREFACE

Volume 8 (Socio-Economic Environment) is one of a series of supporting technical volumes to the Environmental Impact Statement (EIS) for the Wuskwatim Generation Project (the Project). This volume has been prepared by members of the Environmental Management Team retained to assist in the environmental assessment of the Wuskwatim Generation Project, and provides a socio-economic impact assessment (SEIA) prepared in accordance with Final Guidelines issued by provincial and federal regulators for the Project. Volume 8 has contributed to the preparation of the summary Environmental Impact Statement ([Volume 1](#)), and also provides additional technical and professional supporting information to assist in technical review of the EIS Summary Document ([Volume 1](#)) for the Project. This volume has been reviewed by Manitoba Hydro and NCN and is technically consistent with the EIS. It has not been edited for consistency in format, style or wording with either the Summary EIS ([Volume 1](#)) or other supporting volumes.

The purposes of this SEIA are:

- to identify and assess possible effects of the proposed Project on people, including cumulative effects
- to identify methods to manage those effects (mitigate adverse effects or enhance positive effects)
- to identify residual effects remaining after mitigation/enhancement measures have been considered and to assess the significance of those effects
- to identify socio-economic monitoring and follow-up methods.

The SEIA addresses concerns and issues raised by NCN, Manitoba Hydro and those consulted through the Public Involvement Plan (PIP) regarding effects on people. It also provides information that can be useful to plan the Project in a way that avoids or reduces adverse effects and enhances positive effects.

The SEIA draws on literature pertinent to relevant topic areas, published and unpublished data sets and experience of other projects in northern and western Canada. Results of discussions between Manitoba Hydro and NCN (e.g., principles set out in the Agreement-in-Principle) had an important bearing on the assessment of effects (e.g., proposed employment preference). Topics that are still under discussion and not yet resolved introduce uncertainty to conclusions in some areas; these are noted. This volume was finalized in the February to mid-March, 2003 period and reflects the status of information at that time.

NCN provided valuable assistance in preparing the SEIA, reviewing and providing input to the study plan, sharing their Traditional Knowledge, guiding the preparation and implementation of the key person interview program, participating in data collection and analysis and reviewing results. It should be noted that NCN has undertaken a broad scope of analyses for their own planning purposes as they consider whether to participate in the proposed Project. Some of these analyses were used in the SEIA and reported at a level of detail with which NCN feels comfortable. Some background information has been retained as confidential.

Input of people in other communities was also valuable (both through the PIP process and through key person interviews), as was input by Manitoba Hydro staff.

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1.0

INTRODUCTION

As required by Section 6.4 of the April 29, 2002 *Guidelines for the Preparation of an Environmental Impact Statement for the Wuskwatim Generation Project (EIS Guidelines)*, Volume 8 of the **Environmental Impact Statement (EIS)** provides a **socio-economic impact assessment (SEIA)** for the proposed Wuskwatim Generation Project (the Project).

Socio-economic studies consider people, their lifestyles and their communities. In so doing, they take into account the array of interrelated factors that contribute to the social and economic welfare of individuals, families and communities. Such factors include, but are not limited to:

- The ways people cope with life through their economy, social systems, and cultural values.
- The ways people use the natural environment for subsistence, recreation, spiritual activities, cultural activities, and so forth.
- The ways people use the built environment for shelter, making their livelihood, industry, worship, recreation, gathering together, etc.
- The ways communities are organized and held together by their social and cultural institutions and beliefs.
- The ways of life that communities value as expressions of their identity.
- Art, music, dance, language arts, crafts, and other expressive aspects of culture.
- A group's values and beliefs about appropriate ways to live, family and extra-family relationships, status relationships, means of expression, and other expressions of community.
- The aesthetic and cultural character of a community or neighborhood, i.e., its ambience.

(NEPA 1998)

In the case of the Project, socio-economic studies have focused on components of the socio-economic environment identified in the EIS Guidelines:

1. Economy: Economic activities in communities and regions affected by the Project, including employment, business, resource economy (which includes resource use;

details related to Resource Use are addressed in [Volume 7](#) of the EIS) and, in the case of the Nisichawayasihk Cree Nation (NCN), ownership participation.

2. Infrastructure and Services: Infrastructure and services in communities and regions affected by the Project, including effects on community population.
3. Personal, Family and Community Life: Personal, family and community life in communities and regions affected by the Project. This environment presents a much broader picture of individual, family and community well-being and brings together many of the interrelated aspects that contribute to social and economic welfare.

The purpose of the SEIA is to identify and, where possible, quantify predicted effects of the Project for each of the above socio-economic environment areas. To do this requires understanding of the current socio-economic environment, as well as possible future states with and without the proposed Project. Each of the socio-economic environment areas considered constitutes a “type” of effect on people – and often the same people experience effects under more than one of these topics. The SEIA topics in this assessment reflect stakeholder interests and can be considered to be socio-economic Valued Ecosystem, or Valued Environmental, Components (VECs) (see Section 2.1.1).

How socio-economic effects are experienced differs for individuals, families and communities, and varies with the degree to which people are connected to the direct or indirect pathways of change from the Project. Socio-economic effects can also be affected by personal, family and community perspectives about their current situation, their goals and aspirations and how the Project affects their vision for the future. The SEIA addresses these considerations in part by focusing separately on different distinct regional groupings of people and communities affected by the Project. Depending on the sources and scope of effects, not all geographic areas are included in the assessment of each socio-economic environment.

The primary role of **environmental impact assessments** is to facilitate decision-making about a Project, and to “help those likely to be affected to ‘be prepared’, to minimize the possibility of the unexpected occurring, and to address the potential consequences of the anticipated outcomes” (Shrimpton & Storey 2000). The SEIA presented in this document has been developed with this in mind:

- Socio-economic topics to be considered for each of the included environments, and particularly for personal, family and community life, were identified for consideration based on their direct interest to stakeholders and perceived public concern.

- Possible effects on each of the included socio-economic environments and appropriate **mitigation** strategies have been identified in consultation with those most likely to be affected by the Project – most notably, NCN members (see Section 1.1 below), as well as others resident in the **Project Region** defined for the **Public Involvement Plan** (see Section 1.2 below).
- **Residual effects** (those remaining following implementation of mitigation measures) have been assessed for their significance, taking into consideration possible **cumulative effects** from past, present and future projects.
- Flexible monitoring and follow-up measures have been proposed to provide those most likely to be affected with the ability to respond to uncertain, as well as unexpected, effects in a way that is most likely to meet their needs and circumstances.

1.1 LINKAGES

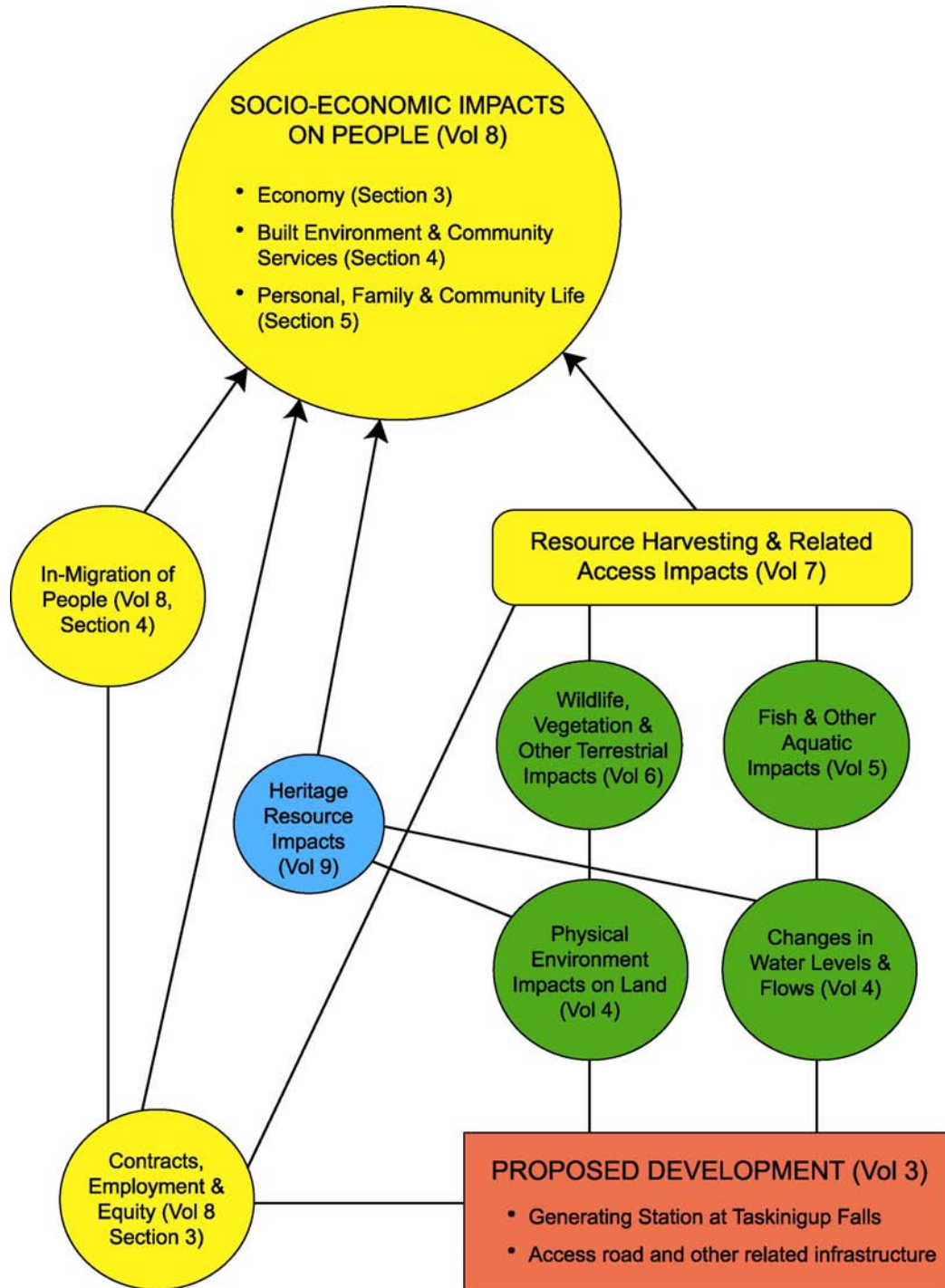
Effects on people stemming from the Project accumulate as a result of an array of direct effects from the Project (such as direct employment and expenditures) and indirectly through changes in the biophysical environment¹ in which people live, on which they depend for income and which sustains their way of life and culture. As such, the SEIA in many instances relies upon results set out in other volumes of the EIS (see Figure 1.1).

Not all socio-economic linkages to the Project will be considered by every reader. For example, it is relevant for the purpose of tests applied under *Canadian Environmental Assessment Act (CEAA)* to distinguish between two different types of socio-economic linkages to the Project. The Reference Guide published by the Canadian Environmental Assessment Agency, *Determining Whether a Project is Likely to Cause Significant Adverse Environmental Effects*, is helpful in understanding the *CEAA* approach to socio-economic effects.

The Guide discusses each of the elements of the *CEAA* test for “significant adverse environmental effects”, explaining that not all socio-economic effects of a project are “environmental effects” as defined in *CEAA*.

¹ For this SEIA, “biophysical environment” includes the land, water, and air environments and associated aquatic life and terrestrial life, e.g., wildlife.

Figure 1.1 Socio-economic Framework: How Socio-economic Studies Relate to Other Parts of the EIS



Source: InterGroup Consultants Ltd.

The two types of socio-economic effects are:

- Socio-economic effects caused by a change in the biophysical environment which, in turn, are caused by the Project (such as resource use or job losses caused by loss of fish habitat);
- Other socio-economic effects: socio-economic effects caused by something else related to the Project (such as an increase in demand on local services caused by an influx of population who have come because of increased job opportunities caused by the Project).

The Guide explains that, since only the first type of effect is an “environmental effect” as defined in *CEAA*, a socio-economic effect of the second type cannot be an “adverse environmental effect” within the meaning of *CEAA*.

Both types of socio-economic linkages to the Project are addressed in this section of the EIS.

1.2 NCN INVOLVEMENT IN THE SEIA

The Nisichawayasihk Cree Nation (NCN), who live primarily in Nelson House (the closest community to the Project) and South Indian Lake, are prospective partners in the Project. Further, Article 8 of the **1996 NFA Implementation Agreement** sets out a process for NCN and Manitoba Hydro to discuss potential future developments that could affect the Nelson House **Resource Management Area (RMA)** and NCN Members. As a result, NCN has had the potential both to influence the way the Project is undertaken and to be significantly involved in advance planning for mitigation of negative effects and enhancement of positive effects. NCN communities, and primarily NCN members at Nelson House, also have the greatest potential to experience the main socio-economic effects stemming from the Project.

Given these important circumstances, NCN has played a key role in guiding SEIA studies undertaken for the Project, particularly in the area of personal, family and community life. The SEIA, in turn, has benefited substantially from the collaboration, cooperation and advice of NCN.

In addition to offering general advice and direction at key junctures during the study

program, NCN involvement has included:

- Collaborating on the development and implementation of the SEIA study program, including the identification of priority issues of concern to the NCN communities for more detailed review.
- Assisting in the development and implementation of key person interview and workshop programs designed to gain a better understanding of community perspectives and concerns about life in Nelson House - current and future, with and without the Project.
- Sharing their perspectives and concerns through these key person interviews and workshops, as well as through informal conversations.
- Undertaking and sharing the results of NCN's own Traditional Knowledge study, which included interviews with resource harvesters and Elders.
- Undertaking and making available the results of NCN Opinion Surveys of members living in Nelson House (2000), South Indian Lake (2001), Thompson (2001) and Winnipeg (2001).
- Reviewing, commenting on and helping to revise the SEIA so that it accurately reflects and is sensitive to NCN community concerns.

1.3 INVOLVEMENT OF OTHER COMMUNITIES IN THE PROJECT REGION

A Public Involvement Plan (PIP) was developed and carried out as part of the EIS study program for the Project (see [Volume 2](#) of the EIS). The PIP defined a Project Region to include northern communities who might be perceived prior to completion of the EIS to be potentially affected by the Project through biophysical changes to the environment or through interests that may be affected pursuant to current agreements with Manitoba Hydro.²

Consultations with communities in the Project Region have provided important inputs to the SEIA with regard to the concerns, interests and local knowledge of Aboriginal and other communities beyond NCN, Nelson House and South Indian Lake.

² Being defined as a potentially affected community for PIP (i.e., being included in the Project Region) does not necessarily mean that significant environmental effects on the community are, in fact, predicted in the EIS.

1.4 OVERVIEW OF THE SEIA DOCUMENT

This document constitutes the main body of the SEIA report for the Project. Its purpose is to identify and, where possible, to quantify predicted economic and social effects of the proposed Project located at the outlet of Wuskwatim Lake in the Nelson House Resource Management Area.

This main report is organized so that SEIA issues and effects can be examined from four main perspectives and categories within these perspectives (see Section 2 for more detailed review):

1. Type of effect: Separate sections of the SEIA address each of the following socio-economic environments:
 - economy (effects on economic activities)
 - infrastructure and services
 - personal, family and community life (reflects combined effects from economy and infrastructure and services, as well as other effects that flow from physical and biophysical changes).
2. Geographic area of effect: Within each section of the SEIA, effects are assessed separately for each of the following regions:
 - **Local Region** (NCN, Nelson House Northern Affairs Community, Nelson House Resource Management Area and South Indian Lake Northern Affairs Community)
 - Project Region (PIP communities in the vicinity of the Burntwood and Nelson Rivers)
 - **Northern Region** (as defined in the current **Burntwood Nelson Agreement (BNA)**)
 - Manitoba and Canada.
3. Sources of effect from the Project: As relevant, each section of the SEIA addresses the following sources of effect from the Project (for each of these, an indication is provided of who is likely to be affected):
 - Project-related changes to land and associated biophysical changes
 - Project-related change in water regime and associated biophysical changes
 - Project expenditures, including employment and Project planning
 - Project investments (NCN ownership participation).

4. Time period of effect: Each section of the SEIA addresses effects for two separate time periods:
- Project construction phase (includes Project planning)
 - Project operations phase.

This document is intended to be a summary, readable document and is supported by a series of appendices that contain more detailed information relevant to the SEIA. Information contained in the appendices is either referenced or briefly summarized in this main SEIA document.

Section 2 of this document provides an overview of the Approach and Methodology used to assemble this report. Sections 3 through 5 each address a key type of effect (i.e., economy, infrastructure and services and personal, family and community life) and are organized according to geographic area of effect. In accordance with the EIS Guidelines, the discussion of effects on each of the socio-economic environments (Sections 3 through 5) includes:

- Sources of effect from the Project
- Existing environment in each region
- Socio-economic effects and mitigation
 - During the construction phase
 - During the operations phase
- Cumulative effects
- Residual effects
- Monitoring and follow-up, including implementation of impact management measures.

Depending on the sources and scope of effects, not all geographic areas are included in each section.

2.0 APPROACH AND METHODOLOGY

The following outlines the approach and methodology for undertaking the SEIA for the Project. In general terms, the approach and methodology used were developed based on:

- The Guidelines developed by the regulators: The EIS Guidelines call for a description of the current and potential future (with and without the Project) socio-economic environments of Aboriginal and other communities potentially affected by the Project for the specific environments of resource use (described in detail in [Volume 7](#)), economy, infrastructure and services and personal, family and community life. In each case, a detailed description of the items to be considered for each environment has been provided by the regulators.
- Topics of importance to NCN: NCN is a potential partner in the **generating station** and a majority of its members live in Nelson House, the nearest community to the Project. As a result, NCN is expected to experience the most noticeable socio-economic effects stemming from the Project. For this reason, NCN members, primarily through NCN's **Future Development** Team, were involved in the design, implementation and analysis of Project-related EIS and socio-economic studies. NCN also provided insight into topics of relevance to the community, particularly in the area of personal, family and community life.
- Review of SEIA literature, previous SEIAs, and SEIA experience, particularly for other large-scale projects in Western Canada: These provided guidance about the topics that should be considered as part of the Project SEIA, as well as methodologies for undertaking impact assessment and developing appropriate mitigation strategies in various areas. Previous SEIAs and SEIA experience with other large-scale projects also provided an indication of the types of effects that could be expected from a Project of this scale.

The analysis undertaken in this volume for each of the socio-economic environment areas (Economy, Infrastructure and Services, and Personal, Family and Community Life) is based on available reference materials, information provided through key person interviews with NCN members and Thompson residents (see [Appendix 2](#) for Key Person Interview Guides used in these interviews), and results of NCN Opinion Surveys in Nelson House (2000), South Indian Lake (2001), Thompson (2001) and Winnipeg (2001) (see [Appendix 3](#)). The key person interviews, in particular, provided important insight

into how effects would be experienced by the communities and residents closest to the Project. The SEIA analysis also utilized results of the consultations with Aboriginal and other communities beyond NCN, Nelson House and South Indian Lake.

Further detail on the approach to the SEIA for the Project is presented in the remainder of this section. Detailed methodology for assessing effects on each socio-economic environment is presented in each of the subsequent sections.

2.1 CATEGORIES OF IMPACT ASSESSMENT

In this study, socio-economic issues and effects of the Project are examined from four main perspectives:

1. Types of effect
2. Geographic area of effect
3. Sources of effect from the project
4. Time period of effect.

Each perspective covers a number of topics, which are presented below. These provide the basis for organizing the SEIA presentation contained in this report.

2.1.1 Type of Effect

The document has been organized to address three main types of effects on people from the Project based on three distinct socio-economic environments:

1. Economy (Section 3): considers effects on economic activities, including employment, business, resource economy (which incorporates resource use) and, in the case of NCN, ownership participation.
2. Infrastructure and services (Section 4): considers effects on community population, infrastructure and services and local finances.
3. Personal, family and community life (Section 5): reflects combined effects on people and communities from economy and infrastructure and services, as well as other effects that flow from physical and biophysical changes. This section covers effects on traditional outdoor activities and outdoor recreation, transportation safety and access, aesthetics, community health, social well-being, culture, community organization and governance, and project compatibility with local goals and plans.

Much like the identification of Valued Ecosystem, or Valued Environmental, Components (VECs) for the Project's physical and biophysical assessments (Volumes 4 through 6), the topics considered for each of the above (sometimes referred to as Valued Social System Functions (VSSFs³)) were determined based on their direct interest to stakeholders and perceived public concern. Sources of public input to this process included:

- Those most likely to be affected by the Project's socio-economic effects – most notably, NCN members (see Section 1.2), as well as others resident in the Project Region (see Section 1.3)
- The broader public in presentations made at public meetings held by the Manitoba Clean Environment Commission to review the draft EIS guidelines, and during consultations with communities in the Project Region
- The regulators in the final EIS Guidelines.

2.1.2 Geographic Area of Effect

The extent to which the Project will have an effect on people depends largely on proximity to and level of involvement in the Project and is also affected by the diversity of perspectives held by different communities and groups. For this reason, the analysis for each type of effect has been broken down into four geographic regions (see Figure 2.1):

1. Local Region
2. Project Region
3. Northern Region
4. Manitoba and Canada.

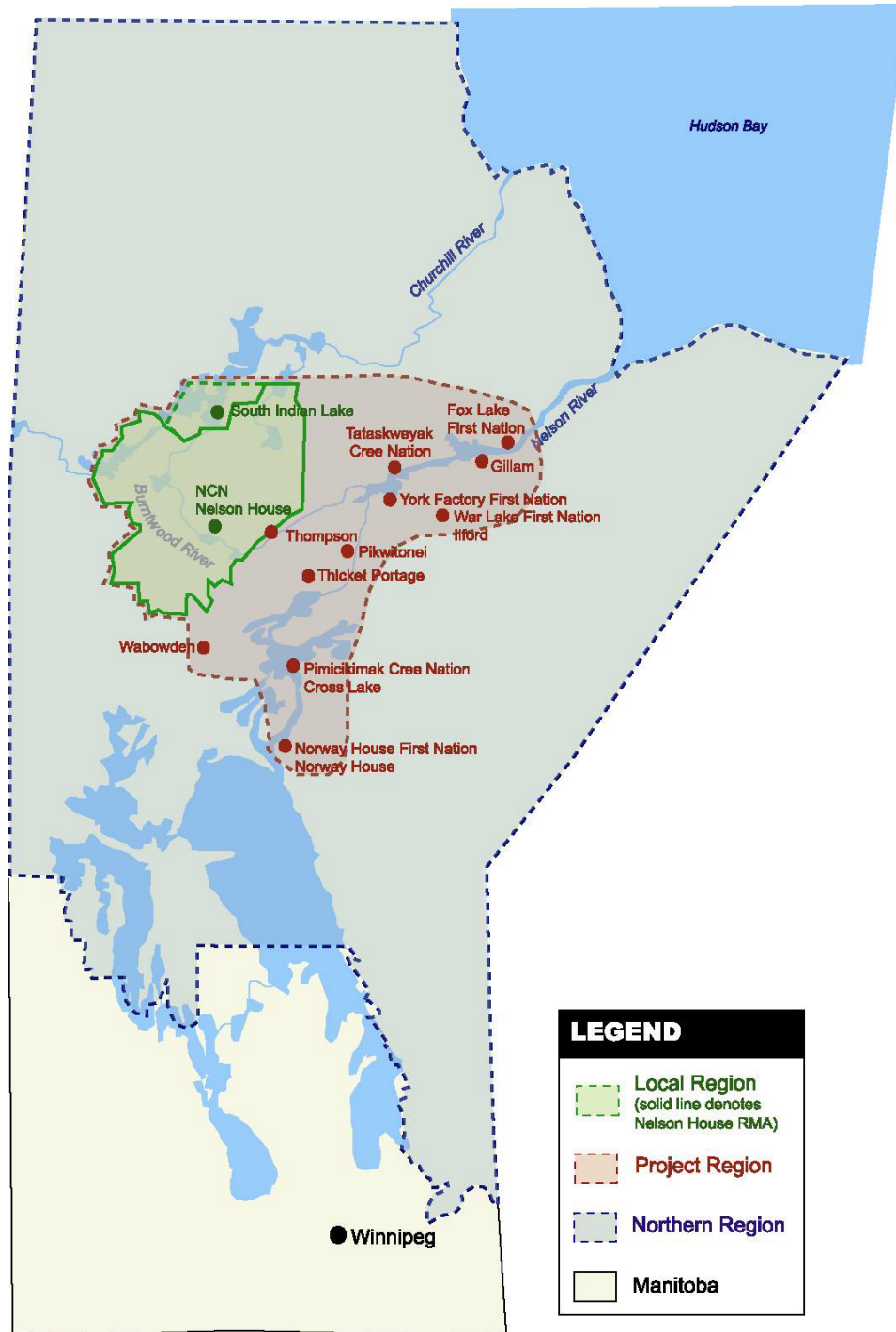
Each of these is described below.

Many of the communities in these regions are “**Aboriginal communities**”, meaning that most of the people residing in the community are Aboriginal (i.e., Indian, Métis or Inuit),

³ The EIS for the McArthur River Project (1995) considered Valued Social System Functions (VSSFs) as indicators of social well-being and quality of life. The EIS for the Voisey's Bay Mine/Mill Project (1997) identified socio-economic VECs. In both cases, the VSSFs/VECs identified are similar to the socio-economic topics considered as part of the Project SEIA.

the community has a separate form of government, provides some level of service to its residents, and has clear community boundaries.

Figure 2.1 Geographic Regions for the Wuskwatim Generation Project SEIA



Source: InterGroup Consultants Ltd.

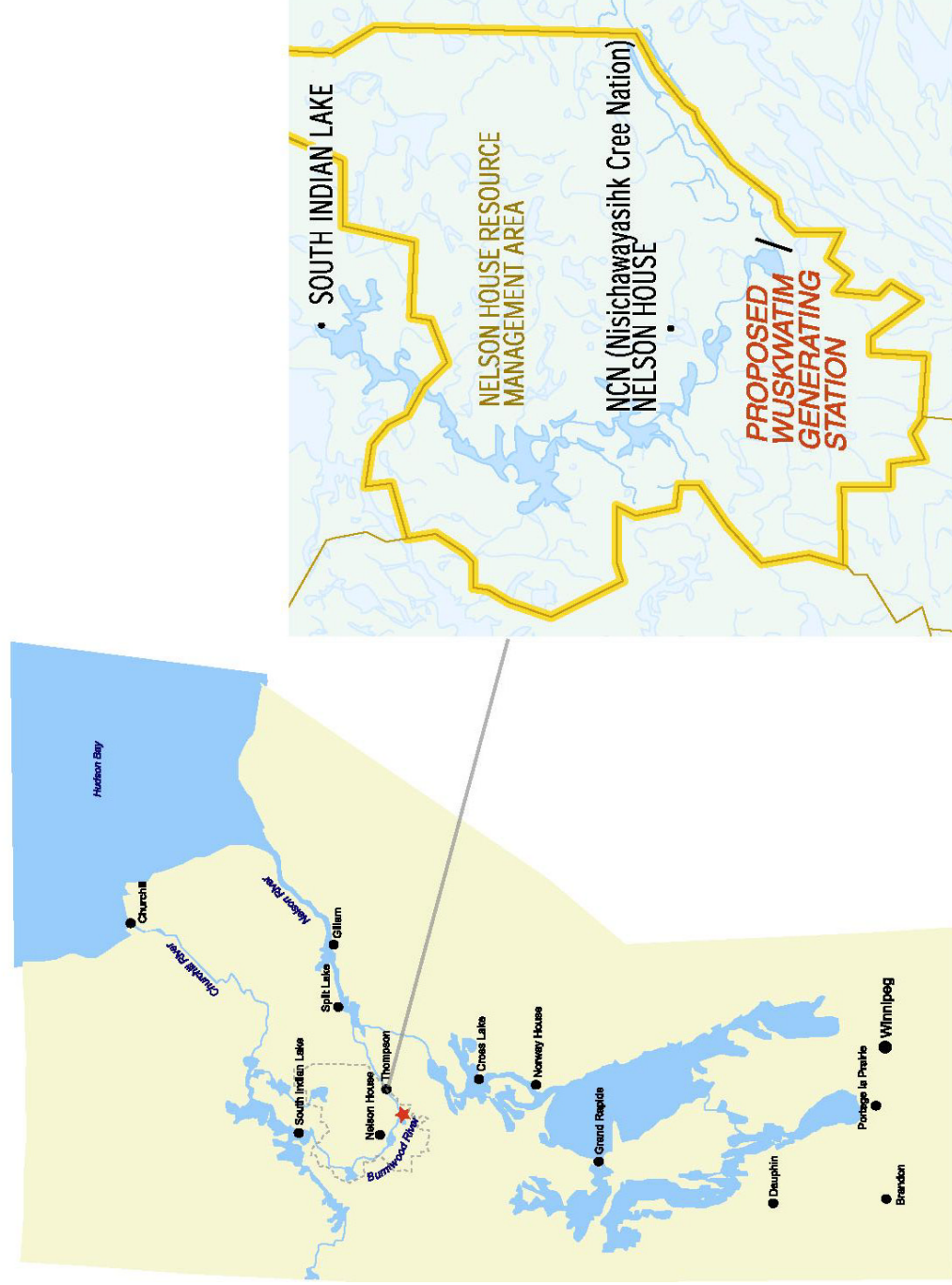
2.1.2.1 Local Region

The Local Region is defined largely by the boundaries of the Nelson House Resource Management Area (RMA) (see [Figure 2.2](#)). It includes all members of the Nisichawayasihk Cree Nation (NCN), including those members living in the First Nation community of Nelson House, and the Northern Affairs community of Nelson House, referred to locally as the Métis community. The Northern Affairs community of South Indian Lake has also been included in the Local Region, given their close relationship with NCN and Nelson House (80 to 90 per cent of South Indian Lake residents are NCN members).

Based on the 1996 Census of Canada, approximately 2,730 people lived in the Local Region – 1,760 in the reserve community of Nelson House, about 80 in the Northern Affairs community of Nelson House and approximately 890 in South Indian Lake.⁴ More recent INAC data places the 2000 population of the Local Region at approximately 3,300 NCN members. (Further population information is presented in Section 4 on Infrastructure and Services. See also [Table 2.1](#).)

⁴ The 2001 Census data have recently become available, and are being reviewed to confirm that a complete and consistent data set can be provided for all communities and regions under review in the SEIA. If feasible, the 2001 data may be added to Volume 8 at a later time.

Figure 2.2 Map of the Local Region



Source: InterGroup Consultants Ltd.

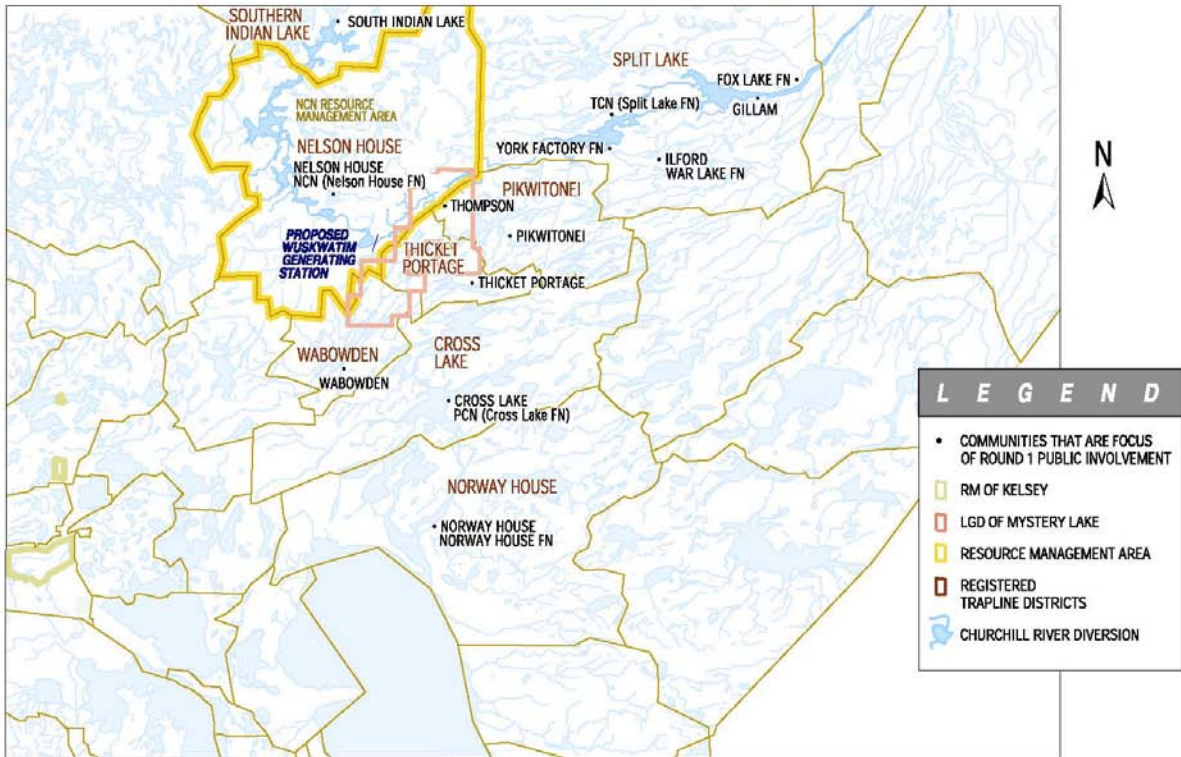
2.1.2.2 Project Region

The Project Region is a broad region that includes, but goes beyond, the Local Region. The Project Region was identified initially for the purposes of the PIP consultation (see [Volume 2](#) of this EIS). For the PIP, it included “potentially affected publics”, defined (prior to completing the EIS) as those who potentially might see themselves as being affected by project-induced biophysical changes (e.g., by upstream or downstream water-based effects, by effects on land or air, or by related biophysical or resource effects) from any component of project construction or operation. Where relevant, potentially affected communities for the PIP also included any community having interests that may be affected pursuant to current agreements with Manitoba Hydro (e.g., communities that are signatories to the **Northern Flood Agreement**). Inclusion in this region for the PIP did not necessarily mean that significant environmental effects would in fact be expected on the basis of the conclusions set out in this EIS.

The Project Region for the Project includes the communities shown in [Figure 2.3](#). It includes communities in the vicinity of the Burntwood and Nelson Rivers, extending from South Indian Lake to Gillam and the Fox Lake First Nation community on the lower Nelson River, and including the Cross Lake and Norway House communities on the upper Nelson River.

Included in a separate EIS pertaining to the Wuskwatim Transmission Project is information concerning additional communities in the PIP Project Region that potentially may be affected only by the transmission facilities.

Figure 2.3 Communities in the Project Region for the Project



Source: InterGroup Consultants Ltd.

There are three different types of communities in the Project Region: First Nation communities, Northern Affairs communities (these communities in this region are composed primarily of Aboriginal people), and Incorporated municipalities (city, town and local government district). The different communities, their classification and their respective populations as of 1996 (the most recent year for which a full data set is available) are indicated in [Table 2.1](#) below.⁵ The total population of each First Nation includes additional members living off-reserve (these are not included in [Table 2.1](#)). (Further population information is presented in Section 4 on Infrastructure and Services.)

All of the First Nation communities and most of the Northern Affairs communities in the Project Region are Aboriginal communities (as defined in Section 2.1.2). In 1996, almost half (46 per cent) of the 29,551 people living in the Project Region were living in Aboriginal communities.

⁵ The 2001 Census data have recently become available, and are being reviewed to confirm that a complete and consistent data set can be provided for all communities and regions under review in the SEIA. If feasible, the 2001 data may be added to Volume 8 at a later time.

Table 2.1 Communities in the Project Region and their Respective Populations

Community	1996 Population
First Nation Communities (On-Reserve populations)	
Nisichawayasihk Cree Nation (NCN) (Also part of the Local Region; most information on this community is presented as part of the Local Region.)	1,760
Tataskweyak Cree Nation (TCN)	1,500
War Lake First Nation	155
York Factory First Nation	300
Fox Lake Cree Nation	155
Pimicikamak Cree Nation (PCN)/Cross Lake First Nation	3,495
Norway House Cree Nation	3,400
Total	10,765
Northern Affairs Communities	
South Indian Lake (Also part of the Local Region; most information on this community is presented as part of the Local Region.)	887
Nelson House (Also part of the Local Region; most information on this community is presented as part of the Local Region.)	77
Ilford (This community is covered with War Lake Cree Nation since almost the entire population became part of the First Nation when it was created in 1993.)	--
Pikwitonei	140
Thicket Portage	204
Wabowden	563
Cross Lake	412
Norway House	575
Total	2,858
Incorporated Municipalities	
Gillam	1,543
Thompson and the Local Government District (LGD) of Mystery Lake	14,385
Total	15,928
Total Project Region Population	29,551

Source: Statistics Canada 1996 Census of Canada.

As noted in the table above, NCN, Nelson House and South Indian Lake are also part of the Local Region and information on these communities is primarily presented in those sections pertaining to the Local Region.

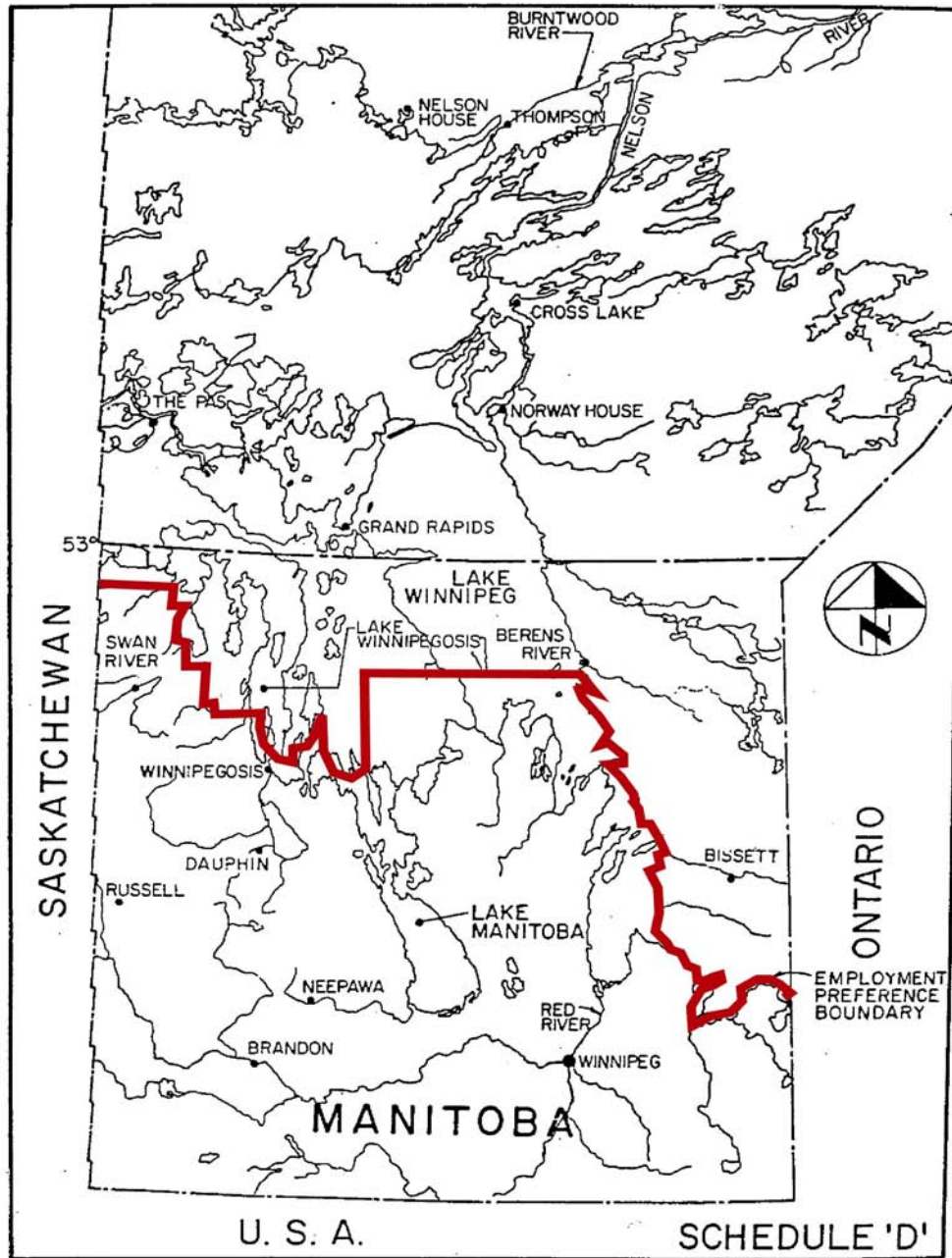
Within the Project Region, but outside the Local Region, special consideration has been given to the City of Thompson and the LGD of Mystery Lake because of their proximity to the proposed Wuskwatim Generating Station (Thompson is approximately 45 kilometres northeast of the Project site and the western boundary of the LGD of Mystery Lake, which surrounds the City, lies about 15 kilometres east of the site), and Thompson's importance as a regional centre for northern Manitoba. After the Local Region communities, Thompson is expected to experience the most noticeable and diverse socio-economic effects from the proposed Project.

2.1.2.3 Northern Region

For the purpose of this study, the Northern Region includes, but goes beyond, the Project Region. It has been defined as the portion of northern Manitoba that extends as far south as the Northern Employment Preference Boundary under the current Burntwood Nelson Agreement (BNA). (The BNA is a **collective agreement** that sets out employment conditions, including hiring preference for northern Aboriginals and northern residents, for construction of the Limestone Generating Station on the Nelson River.) The Northern Region includes, “ ... that part of Manitoba encompassed by Census Division 16 and that part of Census Division 19 north of the Winnipeg River, based on the 1971 Census as prepared by Statistics Canada” (BNA 1989). Census boundaries changed in 1996, with 1971 Census Division 16 and that part of the 1971 Census Division 19 north of the Winnipeg River becoming Census Divisions 19, 21, 22 and 23 (see [Figure 2.4](#)).

According to the 1996 Census of Canada, the population of the Northern Region was 83,134 people in 1996. Of this population, 63 per cent, or 52,400 people, were Aboriginal residents (Statistics Canada 1996).

Figure 2.4 Map of the Northern Region



Source: Burntwood Nelson Agreement – 1989.

2.1.2.4 Manitoba and Canada

The economic effect the Project may have on both Manitoba, including Manitoba Hydro, and Canada is also included in the SEIA analysis. Economic effects from the Project will include contributions to Gross Domestic Product (GDP) as a result of project

expenditures for products, services and labour, project employment, and government revenues earned through income and sales taxes.

In 1996, the population of Manitoba was 1,113,898, or about 4 per cent of the total Canadian population of 28,846,760.

2.1.3 Sources of Effect

Sources of effect refer to those features of the Project that have the potential to affect the socio-economic environment of one or more of the geographic regions under consideration (i.e., Local Region, Project Region, Northern Region, and Manitoba and Canada). For various reasons (e.g., distance from the Project site) not all sources of effect associated with the Project will affect each of the regions under consideration.

There are four main sources of effect associated with the Project:

- Project expenditures (employment, purchases, planning): These consist of planning activities leading up to Project approval, and employment and purchases generated during construction and operation of the Project. Project expenditures related to planning are only a source of effect for the Local Region. Those related to employment and purchases are a source of effect for all of the regions under consideration and are expected to be felt the most in the Local and Project Regions.
- Project-related changes to land and associated biophysical changes: These consist of changes in the local area to land (for location of physical infrastructure and small amounts to be flooded), aggregate (for construction of physical infrastructure) and associated biophysical changes during construction and operation of the Project. Project-related changes to land and associated biophysical changes are primarily a source of effect within the Local Region.
- Project-related change in water regime: Project-related changes in the water regime along a specific portion of the Burntwood River System are predicted as a result of operating the Project. Material changes to water levels and flows are expected to be limited to the area between Early Morning Rapids and the outlet of Opegano Lake (see [Volume 4](#) of the EIS) and, for this reason, will only be a source of effect within the Local Region.
- Project investments (NCN ownership participation): This consists solely of NCN's possible investment in the Project and the stream of revenue that could accrue from

this investment. As such, project investments will only act as a source of effect within the Local Region.

As noted previously (see Section 1.1), not all sources of effect lead to “environmental effects”, as defined in *CEAA*. The Reference Guide published by the Canadian Environmental Assessment Agency, *Determining Whether a Project is Likely to Cause Significant Adverse Effects*, explains that not all socio-economic effects are “environmental effects” as defined in *CEAA*. Under *CEAA*, “environmental effects”, in the context of the SEIA, are defined as socio-economic effects caused by a change in the biophysical environment which, in turn, are caused by the Project (e.g., resource use or job losses due to a loss of fish or other resource habitat). There are, however, other sources of socio-economic effect stemming from the Project that are not caused by a change in the biophysical environment, but by something else related to the Project (e.g., effects caused by employment or purchasing related to the Project). The Guide explains that, in these cases, the socio-economic effect cannot be an “adverse environmental effect” within the meaning of *CEAA*.

More detailed descriptions of the sources of effect for each topic area considered (Economy, Infrastructure and Services, and Personal, Family and Community Life) are provided in the sections dealing with these subjects.

2.1.4 Time Period of Effect

In the case of the Project, there are two distinct time periods during which effects accrue:

- Construction phase: This phase consists of the six years required to construct the generating station and associated facilities (assumed to extend from 2004 to 2009), as well as Project planning activities, which began with NCN in 1997 and still continue today. The majority of socio-economic effects stemming from the Project (excluding effects related to NCN ownership participation) will be felt during Project construction when Project employment and purchasing are at their greatest.
- Operations phase: This phase will see the operation of the Wuskwatim Generation Project and will extend from the end of construction (assumed to occur in 2009) throughout the life of the station. Project employment and purchasing requirements during this phase will be very small and, as a result, socio-economic effects not related to ownership will be much less than during the construction phase.

The EIS Guidelines also call for consideration of effects on the environment during decommissioning of the Project. Given how far into the future this phase is set to occur (at the earliest, 50 years to 100 years following the start of Project operation – no specific date or time period can be provided for actual decommissioning, if it occurs), it is not possible to comment meaningfully on anticipated socio-economic effects during this stage of the Project. At the time that the Project is decommissioned, a Decommissioning Plan will be prepared.

2.2 APPROACH TO IMPACT ASSESSMENT

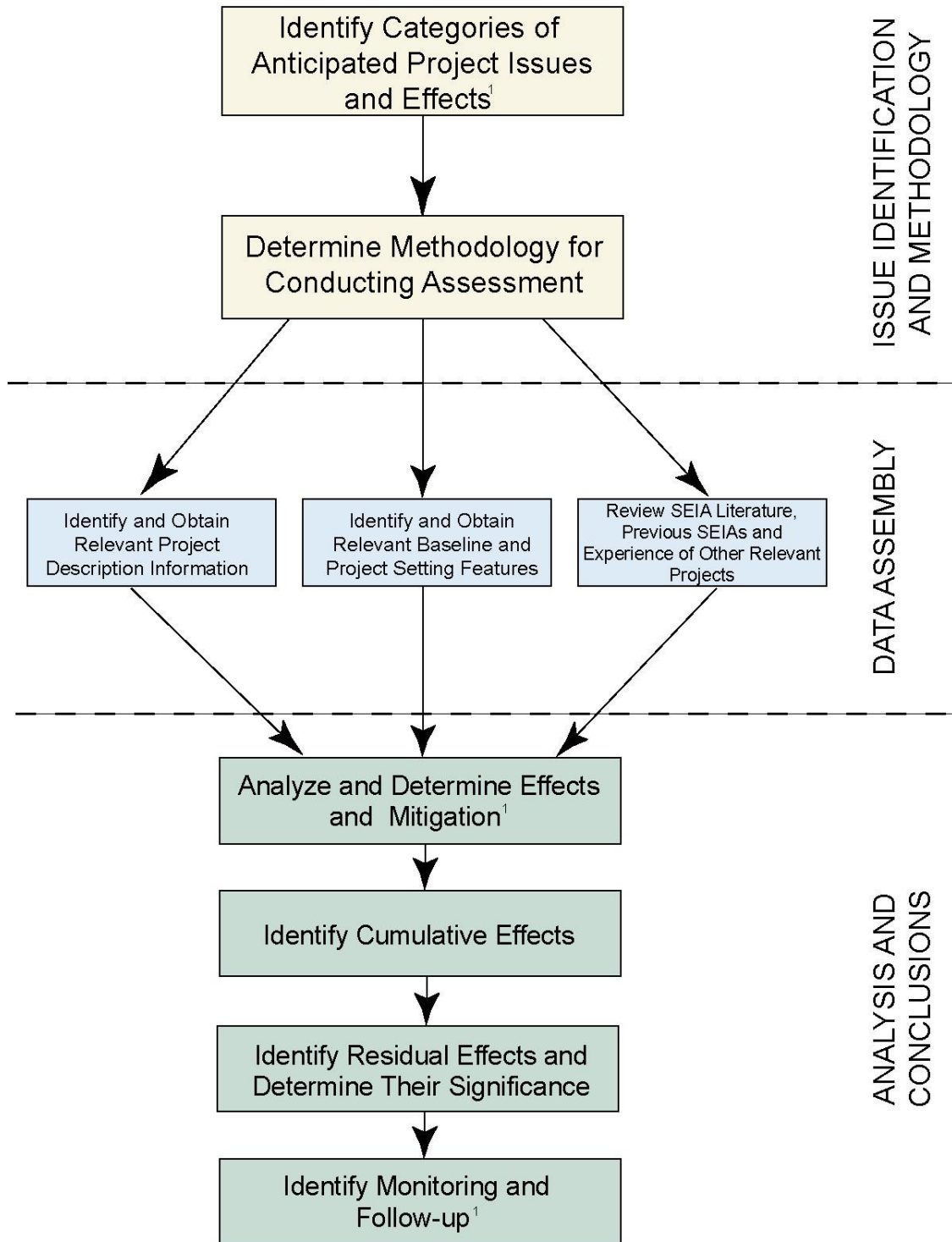
The approach used in this study is based on: the EIS Guidelines developed by the regulators; topics of importance to NCN and others consulted during the PIP; previous SEIAs and experience on other large-scale projects, and SEIA literature. The approach to the SEIA for the Project has been reviewed with Manitoba Hydro and NCN (who were involved in developing and guiding the studies) and, to a lesser extent, with participants in the PIP and regulators (Technical Advisory Committee (TAC)).

While greater detail on the specific methodology used to assess effects for each topic area is provided in the relevant chapters, the general approach for assessing socio-economic effects followed nine major steps:

- Identify categories of anticipated Project issues and effects.
- Determine methodology for conducting assessment.
- Identify and obtain relevant Project description information.
- Identify and obtain relevant baseline and Project setting features.
- Review SEIA literature, previous SEIAs and experience of other relevant projects.
- Analyze and determine effects and mitigation.
- Identify cumulative effects.
- Identify residual effects and determine their significance.
- Identify monitoring and follow-up.

These steps are outlined in [Figure 2.5](#) and discussed separately in the following sections.

Figure 2.5 General Steps in the SEIA Study Process for the Project



Note:

- 1 - Issue Identification, as well as methodology assessment and other assessments noted, is determined by an iterative process throughout the SEIA preparation and includes ongoing review and input by NCN, Manitoba Hydro, participants in the PIP and the regulators.

2.2.1 Identify Categories of Anticipated Project Issues and Effects

Issues relating to adverse effects (costs) and positive effects (benefits) were identified and then, to the extent possible, classified according to the perspectives and broad categories of analysis discussed previously. The issue identification process relied on a number of sources, including:

- SEIA guidelines.
- Workshops, interviews and meetings with Manitoba Hydro and NCN, primarily through their Future Development Team, to determine topics of importance to the proponents and the NCN community.
- Consultations with communities in the Project Region.
- Reviews of SEIA literature, previous SEIAs and experience, especially with respect to large-scale projects located in northern or more remote areas, or in areas with predominantly Aboriginal populations. In this regard, employment data (provided as spreadsheets by Manitoba Hydro) and a retrospective for the Limestone Generating Station Project (Mazur 1990), the most recent large-scale hydroelectric development constructed in northern Manitoba, were particularly helpful.
- Project description information provided by Manitoba Hydro.
- Preliminary setting information (population composition, employment statistics, local businesses) collected for communities in the Local and Project regions.

2.2.2 Determine Methodology for Conducting Assessment

Alternative methods of analysis for assessing the issues and effects identified in 2.2.1 were examined and appropriate methodologies were selected, taking into consideration the importance of the issue or topic, data requirements and availability and time constraints. Detailed information on the methodologies selected is outlined in each of Sections 3 through 5.

2.2.3 Identify and Obtain Relevant Project Description Information

Preliminary Project description information was obtained to assist in initial issue identification. Additional, more detailed Project information was subsequently assembled as requirements for analysis became clearer and more detailed Project description information was known. Manitoba Hydro and, in some cases, NCN, supplied this information.

2.2.4 Identify and Obtain Relevant Baseline and Project Setting Features

As with the Project description, preliminary setting data were obtained from published sources and discussions with NCN members to assist in initial issue identification. More detailed information, particularly for communities in the Local Region and the Project Region community of Thompson, was collected as requirements for analysis became clearer. In addition to describing historical and current situations for the regions under consideration, an assessment was made of what the situation would be like in the future without the proposed Project. Information was obtained from key person interviews (in Thompson and Nelson House), workshops (Nelson House), the PIP consultation, available reports (all regions) and statistical sources (all regions).⁶

2.2.5 Review SEIA Literature, Previous SEIAs and Experience of Other Relevant Projects

Reviews of SEIA literature, previous SEIAs and experience of other relevant projects, particularly other large scale projects in Western Canada, were used for three purposes:

- To assist in determining the major sources of effect on the socio-economic environment
- To assist in identifying or determining the nature or extent of effects. SEIA literature, previous SEIAs and SEIA experience were all used to assess effects related to employment, business, worker migration and personal, family and community life in the Local and Project Regions
- To identify possible monitoring and impact management strategies (see (2.2.7) below) based on those that have proven effective on other, similar projects.

Key projects/SEIAs considered as part of this review included the following:

- Limestone Generating Station – experience with the Environmental Impact Study (1985) and a review of the Limestone Project: Retrospective Review (Mazur 1990) and project employment data provided by Manitoba Hydro.
- Voisey's Bay Mine/Mill Project – review of the Environmental Impact Statement (1997) and the Monitoring and Follow-up Program (1998).

⁶ The 2001 Census data have recently become available, and are being reviewed to confirm that a complete and consistent data set can be provided for all communities and regions under review in the SEIA. If feasible, the 2001 data may be added to Volume 8 at a later time.

- McArthur River Project – experience with and review of the socio-economic assessment included as part of the Environment Impact Assessment (1996).
- Cigar Lake Project – experience with and review of the socio-economic assessment included as part of the Environment Impact Assessment (1996).
- Northern Saskatchewan Uranium Industry – review of the Community Vitality Monitoring Partnership (2000).
- BHP Diamond Mine – review of the Ekati Environmental Management Plan (1996).
- Diavik Diamond Mine – review of the Socio-economic Monitoring Agreement (1999).
- Weyerhaeuser (Saskatchewan Timberlands) Twenty-Year Forest Management Plan – experience with and review of the Environmental Impact Statement (1999) for the socio-economic environment.

2.2.6 Analyze and Determine Effects and Mitigation

The information obtained on project description and setting, and through a review of SEIA literature, previous SEIAs and experience of other relevant projects, was analyzed using the selected methodology for each particular topic. Wherever possible, predicted effects were quantified. Where relevant, because of uncertainty about key influencing factors or about how people could respond to and experience effects, a range rather than a single number estimate is presented. Where effects could not be quantified, attempts were made to establish the likely direction and likely order of magnitude of the predicted change. In all cases, both positive and negative effects are presented.

Areas where it might be appropriate or necessary to monitor, augment beneficial or reduce adverse effects were identified and possible measures for addressing these are presented. The areas requiring impact management have been identified on the basis of results of both the impact assessment and discussions with NCN, Manitoba Hydro, key persons in Thompson, other Project Region communities and other interested parties. The specific measures presented address the cause or consequence of the effect, and draw on approaches that have been used or proposed for other projects or are based on professional judgement. Additionally, the measures presented take into account local circumstances so that they are tailored to meet the needs of those most affected. Proposed measures are at a level that provides flexibility to respond to potential variations in the nature and extent of Project effects.

2.2.7 Identify Cumulative Effects

A cumulative effects assessment was undertaken to look at effects likely to result when Project effects occur in combination with other projects or activities. This includes other projects and activities that have occurred, are ongoing or are likely to proceed. Cumulative effects are discussed for each of the socio-economic environments under consideration (i.e., economy, infrastructure and services, and personal, family and community life). The projects and activities considered are those whose effects overlap with predicted Project effects in either space or time. Since predicted Project effects vary according to the environment and geographic region under consideration, so also do the other projects and activities considered as part of the cumulative effects assessment for each of these environments and regions.

2.2.7.1 Past and Current Projects and Activities

For the purposes of the SEIA, past and current projects and activities are considered to form an integral part of the existing environment for each geographic region and are incorporated into the baseline setting conditions (i.e., the current and projected environment without the Project) against which predicted Project effects are assessed. As such, these past and current projects and activities, along with their projected future levels, are properly accounted for in the initial SEIA assessment of Project effects. Effects stemming from these projects and activities would be double-counted if considered again in the cumulative effects assessment.

Past and current projects and activities considered as part of the baseline setting conditions, and excluded from the cumulative effects assessment, include the following:

- **The Churchill River Diversion (CRD)**: The CRD was built by Manitoba Hydro in the 1970s. The CRD developed control structures at Notigi Lake (in the Nelson House RMA) and at Missi Falls (at the northern end of Southern Indian Lake), which diverted a major share of the Churchill River down the Rat/Burntwood Rivers into Split Lake and the lower Nelson River. The CRD resulted in substantial flooding in Southern Indian Lake, the Nelson House RMA, and at Nelson House.

In the Local Region, NCN, as a result of CRD, is a signatory to the Northern Flood Agreement (NFA) – a 1977 agreement among Canada, Manitoba, Manitoba Hydro and the Northern Flood Committee (representing five First Nations, including NCN), and the subsequent 1996 NFA Implementation Agreement among NCN, Canada,

Manitoba and Manitoba Hydro. Article 8 of the 1996 NFA Implementation Agreement also sets out a process for NCN and Manitoba Hydro to discuss all potential future developments that could affect waters within the Nelson House RMA. The Agreement also led to creation of the NCN Trust, which funds and, in some cases, administers several community programs and **infrastructure development**.

The flooding, water regime changes and erosion brought on by CRD affected the NCN resource economy and navigation along CRD-affected waterways within the Nelson House RMA. CRD-related changes also affected local residents' sense of well-being and cultural identity in Nelson House and South Indian Lake, and have helped to shape personal, family and community life in these communities today.

In the City of Thompson, development of the CRD led to an agreement between the City of Thompson and Manitoba Hydro setting out their respective rights and obligations arising from the CRD. This agreement addressed many matters, including lands of the City affected by the CRD, appropriate mitigation works, ongoing rights and obligations related to the banks and waters of the Burntwood River, monitoring and notifications regarding water flows within the City boundaries, provision of a boat launching facility and ensuring that a continuing and satisfactory water supply is available to the City, i.e., one that is not to be adversely affected by Hydro operations (City of Thompson 1976).

- Provincial Road (PR) 391: Constructed in 1969, PR 391 is an all-weather road that connects Nelson House to Thompson and to Provincial Trunk Highway (PTH) #6 and the rest of southern Manitoba. PR 391 created the first all-weather access into the community of Nelson House.
- INCO Ltd.'s Thompson Operations: INCO Ltd. has a nickel plant (mill, smelter and refinery) in Thompson that has operated since 1961, and a mine site southwest of the City that operated from 1966 to 1977 and then from 1989 onwards. The mine is currently being deepened to increase daily ore production. Mine deepening is expected to increase the lifespan of the mine at least 15 years (up to 2016).

INCO is the primary employer in Thompson, employing about 20 per cent of the City's workforce in 1996. There has been a decreasing trend in INCO employment in recent years and this is expected to continue into the future. Population levels in the City have historically been linked to fluctuations in INCO employment levels; however, this effect has lessened in recent years with the development of Thompson as a government and regional service centre for Northern Manitoba.

City infrastructure and finances are also linked to INCO. The water system is owned and operated by INCO. Additionally, INCO pays the City Grants-In-Lieu of Taxes each year of approximately \$7 million. INCO's Grants-In-Lieu of Taxes decreased by \$500,000 in each of 2000, 2001 and 2002; they are currently being renegotiated for the year 2005 and onward, but are likely to be lower than in the past.

- Ruttan Mine Closure: Ruttan Mine was a base metal mine located in the community of Leaf Rapids, approximately 210 kilometres northwest of Thompson. The mine was closed in June, 2002. Key person interviews indicate that, as a result of the mine closure, there has been some migration into the City of Thompson.
- Natural Population Growth: For the purposes of the SEIA, population growth without the Project is considered to be a current activity that will continue into the future. Particularly in the Local Region, currently high population growth rates will continue to place pressure on community services and infrastructure, especially housing.
- NCN Projects and Activities: In the Local Region, this includes developments within Nelson House and within the Nelson House RMA, resource use activities within the Nelson House RMA (e.g., domestic harvest, commercial fishing, commercial trapping and ecotourism, which is expected to target waterways that are not part of the Churchill River Diversion).
- Other Influencing Factors: In the Local Region, there are a number of other factors that have influenced the economy, personal, family and community life and, to some extent, infrastructure and services in the reserve community of Nelson House. Many of these factors have also affected other First Nation communities in Manitoba and Canada. For NCN, these include, but are not limited to:

- *The Natural Resources Transfer Act*
- An elected Chief and Council system
- The residential school system
- Television and other media
- The emergence of self-governing institutions within the community (education, health programming, child and family services), and
- Bill C-31, an *Act to Amend the Indian Act*.

2.2.7.2 Future Projects and Activities

Table 2.2 below outlines the future projects and activities that are the focus of the cumulative effects assessment for the SEIA. The future projects and activities included are those considered likely to proceed in the foreseeable future. Projects and activities in this category have not been considered elsewhere in the SEIA.

Based on advice provided in the *Reference Guide: Addressing Cumulative Environmental Effects* (FEARO 1994), projects and activities considered likely to proceed are those which:

- Have been approved
- Have been officially announced by the proponent
- Are in a government approvals process
- Are directly associated with the Project, or
- For which there is strong indication that they will be implemented or put forward for government review before completion of the Project's construction phase (i.e., between 2003 and 2009). This time frame was chosen for two reasons:
 1. the majority of Project-related socio-economic effects are predicted to occur during the construction phase
 2. it is difficult to assess the likelihood of projects and activities, or their possible effects, for a longer planning horizon.

The types of effects stemming from future activities and projects are predicted based on best available information, consultation with key persons (including NCN members and PIP participants) and professional judgement. In most cases, the detail known about future projects and activities and their possible interaction with the Project is such that only a general description of anticipated cumulative effects is possible. For this reason,

and in accordance with the EIS Guidelines, each section addressing cumulative effects includes discussion of the assumptions and analyses used to develop the conclusions reached, as well as the level of confidence in the data used to develop the analyses (based on available project description information and level of commitment about when the development will proceed).

In addition to the Projects presented in [Table 2.2](#), NCN also has plans for a number of projects and activities that may influence the future. These include economic development plans, a community development planning process and plans for future housing and infrastructure developments. Most of these plans are either community-based (and in some cases part of the baseline setting) or involve economic activity that does not tend to involve the Wuskwatim area; these plans are often also confidential to NCN and not available to be reported on in this EIS. These projects and activities have not been included in the cumulative effects assessment set out in this report; aside from confidentiality and other limits, these are excluded primarily because they are not sufficiently developed to allow comment on the possibility of cumulative effects from the Project. It is understood, though, that NCN's internal reviews of the Project will fully consider any such other plans and projects to the extent that they may have any cumulative effects associated with the Project.

In dealing with uncertain future projects or activities, it is important to note that any such project would typically be subject to its own regulatory review and approvals. Issues related to the cumulative effects of such new future developments in combination with the Project can therefore be best and most properly assessed when and if new government approvals are sought for such projects.

Table 2.2 Future Projects/Activities included in the Cumulative Effects Assessment for the SEIA

Project/Activity	Description of Project/Activity, including Key Assumptions	Scope of Possible Cumulative Effects		Nature of Possible Cumulative Effects	Confidence with Data
		Regions Affected	Socio-economic Environments Affected		
Wuskwatim Transmission Project	<p>Development of the Project will require the construction of new transmission facilities (transmission lines and stations) in order to deliver the electricity generated into the existing Manitoba Hydro transmission system. Transmission facilities include:</p> <ul style="list-style-type: none"> • A new 230 kilovolt (kV) switching station at the Wuskwatim Generating Station site. • A new transformer station, the Birchtree Station, in the LGD of Mystery Lake just south of Thompson. • A new 230 kV transmission line to connect the Wuskwatim Switching Station to the proposed Birchtree Station. This line will be the first built and will initially be used to provide construction power to build the generating station. • Two 230 kV transmission lines between the Wuskwatim Switching Station and the existing Herblet Lake Station at Snow Lake. • Herblet Lake Station at Snow Lake to the existing Rall's Island Station at The Pas. • Equipment additions at the existing Herblet Lake and Rall's Island stations. 	Local Region	Economy: Personal, Family and Community Life	<p>Construction of the Wuskwatim Transmission Project has the potential to create a small number of job and business opportunities for Local Region residents. These will occur during the same time period as construction of the Project.</p> <p>A large portion of the transmission lines are located in the Nelson House RMA and may provide access to previously inaccessible areas (especially traplines) south of the Burntwood River.</p>	<p>High</p> <p>Project description is well known and timing of the licensing and approvals processes, as well as the start of development, are set to occur in conjunction with those for the Project.</p>

Table 2.2 Future Projects/Activities included in the Cumulative Effects Assessment for the SEIA Cont'd

Project/Activity	Description of Project/Activity, including Key Assumptions	Scope of Possible Cumulative Effects		Nature of Possible Cumulative Effects	Confidence with Data
		Regions Affected	Socio-economic Environments Affected		
Gull/Keeyask Generating Station	<p>The proposed Gull/Keeyask Generating Station is located on the Nelson River, about 30 kilometres west of Gillam and 180 kilometres east-northeast of Thompson. The Gull/Keeyask station would produce about 600 megawatts of power.</p> <p>Planning for the generating station has been underway since 1999, but no decisions have been made about whether to proceed with the project. An Agreement-in-Principle related to this project was ratified by Manitoba Hydro and Tataskweyak Cree Nation in October 2000; currently, these parties are working with three other potential Cree Nation partners in the vicinity of the project (Fox Lake Cree Nation, York Factory First Nation, and War Lake First Nation). To meet the earliest protected date for first in-service power (2012), construction would have to begin in 2007. Project construction would take 6 to 7 years and construction employment would peak at between 1,200 and 1,500 workers.</p>	Project Region	Economy	<p>For residents outside of the Local Region, construction of the Wuskwatim Transmission Project has the potential to create limited job and business opportunities for residents. These would overlap with construction of the Project.</p>	Medium
		Local Region	Economy; Infrastructure and Services; Personal, Family and Community Life	<p>Construction of the Gull/Keeyask Generating Station, as currently proposed, would partially overlap with construction of the Project and partially occur after Project construction is complete. This may provide additional job opportunities for residents in the Local Region and extend the period for completing trades apprenticeships. It may also lead to extension of population, infrastructure and services effects in the Local Region, as well as employment-related effects on personal, family and community life stemming from the Project.</p>	<p>The project is still in its planning stages and no commitments have been made yet to proceed to licensing, let alone development. Project description is only partially known; timing for the project's licensing and approvals processes and subsequent construction start date reflects earliest dates under current planning assumptions.</p>

Table 2.2 Future Projects/Activities included in the Cumulative Effects Assessment for the SEIA Cont'd

Project/Activity	Description of Project/Activity, including Key Assumptions	Scope of Possible Cumulative Effects		Nature of Possible Cumulative Effects	Confidence with Data
		Regions Affected	Socio-economic Environments Affected		
Notigi Project	The Notigi Project includes construction of the Notigi generating station and associated transmission facilities. The Notigi generating station would be located at the junction of the Rat and Burntwood Rivers, beside the existing Notigi control structure in the Nelson House RMA. As proposed, it would produce about 100 megawatts of power and involve no new flooding. NCN and Manitoba Hydro have consulted on the Notigi Project, and it is included in the Agreement-in-Principle signed in September 2001 (see Appendix 5). It has since been determined that Notigi will not proceed for in-service before 2014, and NCN and Manitoba Hydro are not pursuing further negotiations on the project at this time. The Notigi Project is therefore not likely to start construction until after 2009, after Project construction is complete.	Project Region	Economy, Infrastructure and Services; Personal, Family and Community Life	Construction of the Gull/Keeyask Generating Station, as currently proposed, would partially overlap with construction of the Project and could also create additional employment opportunities for residents in the Project Region, especially Aboriginal residents. It may also lead to population changes in Thompson and other Project Region communities, and associated effects on community infrastructure. As well, it is possible that workers on the Gull/Keeyask Project may also visit Thompson on their days off.	Medium Project description is partially known because of earlier planning. In terms of timing, development of Notigi is unlikely to start until completion of Project construction, but exact timing has not yet been determined and no commitments have been made yet to proceed to licensing, let alone development.
		Local Region	Economy	Construction of the Notigi Project is not likely to start until after Project construction is complete. However, it may provide job and business opportunities for Local Region residents that would make use of the skills and experience acquired during Project construction. There would be little overlap in Project-related effects on infrastructure and services effects or personal, family and community life due to the later timing, the absence of any need for an infrastructure construction stage, and the relatively small scale of the Notigi Project compared with other generation projects being considered in the region.	

Table 2.2 Future Projects/Activities included in the Cumulative Effects Assessment for the SEIA Cont'd

Project/Activity	Description of Project/Activity, including Key Assumptions	Scope of Possible Cumulative Effects		Nature of Possible Cumulative Effects	Confidence with Data
		Regions Affected	Socio-economic Environments Affected		
Conawapa Project	<p>The Conawapa Project, if developed, may provide a 1,275 megawatt generating station. To proceed, this project will require a new Bipole (DC) transmission line to be, or to have been, developed (e.g., Bipole III, as described below) and perhaps additional transmission connection(s) to markets outside Manitoba (e.g., possibly another transmission line that would carry power from Manitoba's provincial system to Ontario Hydro's). The generating station could be located on the Lower Nelson River about 80 kilometres northeast of Gillam.</p> <p>Manitoba Hydro considered development of Conawapa in the early 1990s, but withdrew its application to build Conawapa in December, 1992, following cancellation of the Ontario-Manitoba energy sale agreement.</p>	<p>Project Region</p>	<p>Economy</p>	<p>It is also possible that residents of the Project Region may gain employment on construction of the Notigi Project, enabling them to use skills and experience acquired on the Project.</p> <p>If construction of the Conawapa Project partially overlaps with Project construction, it may provide additional job opportunities for residents in the Local Region and extend the period for completing trades apprenticeships. It may also lead to extension of population, infrastructure and services effects in the Local Region, as well as employment-related effects to personal, family and community life stemming from the Project.</p> <p>If the beginning of construction of Conawapa follows completion of Project construction, it could provide job and business opportunities for Local Region residents that would make use of the skills and experience acquired during Project construction. In this case, there would be no overlap with Project-related effects to infrastructure and services effects or personal, family and community life.</p>	<p>Low</p> <p>Project description is not well developed and no commitment has been made to develop Conawapa, or to protect any earliest date for its development.</p>

Table 2.2 Future Projects/Activities included in the Cumulative Effects Assessment for the SEIA Cont'd

Project/Activity	Description of Project/Activity, including Key Assumptions	Scope of Possible Cumulative Effects		Nature of Possible Cumulative Effects	Confidence with Data
		Regions Affected	Socio-economic Environments Affected		
	Manitoba Hydro continues to re-assess possible development of Conawapa. No commitment has been made to develop Conawapa, or to protect any earliest date for its development. The earliest possible construction start is currently estimated to be 2006, for a potential earliest possible first power in-service date of 2015. Peak construction employment for the generating station is likely to be comparable to that for construction of the Limestone Generating Station, at about 1,800 positions. (Limestone was built in the mid- to late-1980s and is similar in size to Conawapa.)	Project Region	Economy; Infrastructure and Services	If construction of the Conawapa Project partially overlaps with Project construction, it may provide additional job opportunities for Aboriginal residents in the Project Region and extend the period for completing trades apprenticeships. It may also affect population, infrastructure and services in Project Region Aboriginal communities. If the beginning of construction of Conawapa follows completion of Project construction, it could provide job and business opportunities for Project Region Aboriginal residents who would make use of the skills and experience acquired during Project construction.	
Bipole III	Bipole III is a 500 kilovolt high voltage direct current transmission line along the east side of Lake Winnipeg that Manitoba Hydro is currently planning to develop without linkage to any new generation project. Manitoba Hydro is very early in the Bipole III planning process. The earliest date for start of construction of this transmission line is 2006, and the earliest in-service date is 2010.	Project Region	Economy	Bipole III may provide some additional, albeit limited, employment and business opportunities for Project Region residents, which overlap or follow immediately after construction of the Project.	Medium The project is in its planning stages. Project description is partially known, as is timing for the project's licensing and approvals processes and subsequent construction start date.

Table 2.2 Future Projects/Activities included in the Cumulative Effects Assessment for the SEIA Cont'd

Project/Activity	Description of Project/Activity, including Key Assumptions	Scope of Possible Cumulative Effects		Nature of Possible Cumulative Effects	Confidence with Data
		Regions Affected	Socio-economic Environments Affected		
Kelsey Upgrade	A committed maintenance program at the Kelsey Generating Station to refurbish seven turbines and rewind one generator. The program will take place over the next five to eight years and is expected to yield about 24 megawatt capacity increase and about 88 gigawatt-hour dependable energy increase.	Project Region	Economy	The Kelsey Upgrade may provide some additional, albeit limited and highly skilled, employment and business opportunities for Project Region residents, which overlap or follow immediately after construction of the Project.	Medium The project has been committed and project description is fairly well known.
Tolko Forest Management Plan	The Ten-year Forest Management Plan for Tolko includes possible construction of a winter road and timber harvesting in areas to the south and east of Threepoint Lake, between PTH 6 and the Burntwood River and including Partridge Crop Hill. (There is a high probability that the Partridge Crop Hill area will not be harvested – Partridge Crop Hill has spiritual importance for NCN and NCN has indicated that it would object to forestry operations in this area. Also, there is currently a legal challenge to Tolko's license. As of today, the license is still valid, so harvesting plans have been included here.) Harvesting in this area is set to occur in the 2009-2014 time period, following the construction phase of the Project.	Local Region	Economy; Personal, Family and Community Life	During the Project's operations phase, if access across the dam is permitted, resource use in areas south of the Burntwood River (which are currently difficult to access) could increase. Tolko harvesting activity in this area may overlap. Further, a winter road would provide further access into this area, and could create additional access management concerns.	Low Project description is not well developed and there is on-going discussion between NCN and Tolko about harvesting, and timing of same, in this area.

2.2.8 Identify Residual Effects and Determine Their Significance

Residual effects, or effects predicted to remain after implementation of mitigation measures outlined in the EIS, were determined based on the anticipated outcome of proposed mitigation measures and, where known, possible cumulative effects. In all cases, both positive and adverse residual effects are presented.

As required in Section 8 of the EIS Guidelines, the description of residual effects includes a characterization as to whether residual environmental effects “are significant or insignificant, and the rationale for such characterization”. The significance of both positive and adverse residual socio-economic effects was determined based on:

- Criteria outlined in the EIS Guidelines, including nature of the effect, magnitude of the effect, duration of the effect, frequency of the effect, reversibility of the effect, temporal boundaries (short or long term), spatial boundaries (project site, local region or regional), and ecological context.
- Scientific analysis of ecosystem effects, along with Traditional Knowledge, local knowledge and available experience in determining the significance of potential effects.
- A review of methodologies used to determine significance in previous EIS documents (e.g., Voisey’s Bay (1997), McArthur River Project (1995)) and in the Federal Environmental Assessment Review Office’s (FEARO) *Reference Guide: Determining Whether a Project is Likely to Cause Significant Adverse Environmental Effects* in the *Responsible Authority’s Guide* (1994).

Using the above, the definitions of significance outlined in [Table 2.3](#) below were developed for use in the socio-economic impact assessment for this Project. Wherever possible, the significance of residual effects integrates the cumulative effects of activities taking place during each Project phase (i.e., construction or operations), as well as planned mitigation or impact management measures responding to planned monitoring. For residual effects stemming from other components of the EIS (e.g., Resource Use in [Volume 7](#)), the determination of significance is based on the methodology and conclusions reached separately for those relevant VECs.

Definitions of significance regarding effects on valued components of the socio-economic environment assess effects on different “components” of people’s lives in

communities or regions. Compared to assessment of significance for effects on valued components of the biophysical environment, this report must consider:

- Differing perspectives and values among different groups of people about their community and region, as well as their individual and family circumstances.
- The problems inherent in assessing separately effects on different aspects or components of people's lives that each contribute to an overall "effect" on any group of people; i.e., effects may be either positive or negative, depending on the group affected, and may be both positive and negative when different groups are differentially affected.

These considerations are reflected in [Table 2.3](#) and in the assessments undertaken in this report.

Similar to the biophysical assessments, the analysis of significance for socio-economic effects, as outlined in [Table 2.3](#), focuses on three key assessment components for each aspect of the socio-economic environment affected by the Project:

- Duration: short-term (effects do not last materially beyond the construction phase or last only during the first few years of the Project's operations phase); medium-term (effects last throughout the construction phase and beyond the first few years of the operations phase, or only during the operations phase and beyond the first few years but not for a major portion of the operations phase); and long-term (effects last throughout a major portion of the operations phase or are irreversible).
- Magnitude: small (no definable or measurable effect on the socio-economic environment under consideration); moderate (effect could be measured, i.e., be statistically significant, with a well-defined monitoring program); and large (effects are readily discernible, i.e., likely to be readily noticeable without a monitoring program).
- Socio-economic "geographic" extent: localized (effects confined to a small number of people within a very localized area of one of the socio-economic regions); partial community (effects extend to at least a moderate number of people within a larger definable group in any of the socio-economic regions); and whole community or region (effects extend to an entire definable group of people, i.e., a whole community, in any of the socio-economic regions).

Table 2.3 Definitions for Determining Significance of Positive and Adverse Residual Socio-economic Effects

Significance of a Positive or Adverse Residual Effect	Definition
Significant - Major Residual Effect	A major residual effect is one of long term duration (lasting throughout a major portion of the operation phase of the Project) <i>and</i> one affecting an entire definable group of people (e.g., a whole community) in any of the socio-economic regions under consideration in sufficient magnitude to cause a discernible ongoing change to one or more of the socio-economic environments (i.e., Economy, Infrastructure and Services, Personal, Family and Community Life).
Potentially Significant - Moderate Residual Effect	A moderate residual effect is potentially significant and is either: (a) one of medium or longer-term duration (lasting throughout the construction phase of the Project, but not likely to last for many years into the Project’s operation phase, or lasting throughout more than the first few years of the Project’s operation phase) that affects at least a moderate number of people within a larger definable group (i.e., the entire population is not necessarily affected) in any of the socio-economic regions under consideration in sufficient magnitude to cause a discernible change to one or more of the socio-economic environments under consideration, or (b) one of short-term duration (lasting only through most of the construction phase or though only the first few years of the Project’s operation phase) that affects an entire definable group of people (e.g., a whole community) in any of the socio-economic regions under consideration in sufficient magnitude to cause a readily discernible change (e.g., likely to be discernible without a monitoring program) to one or more of the socio-economic environments under consideration. In order to determine significance of these effects, additional factors will often need to be considered
Not Significant or Insignificant - Minor Residual Effect	A minor residual effect is either: (a) one of short-term duration (not lasting materially beyond the Project’s construction phase or lasting only during the first few years of the Project’s operation phase), or (b) one affecting only a small number of people within a very localized area of one of the socio-economic regions under consideration. Effects for either of the above also would not be of sufficient magnitude to cause a readily discernible or irreversible change to one or more of the socio-economic environments under consideration.
Not Significant or Negligible Residual Effect	A negligible residual effect has no definable effect at any level or is insufficient to be termed a minor effect. Effects, if any, are of very short-term duration, very localized or affect a very small number of people and are indistinguishable from projected baseline conditions (without the Project) when assessed at the stated regional level.

Based on [Table 2.3](#), the socio-economic assessment used the following definitions for an initial rating of the significance of residual positive and negative effects within a socio-economic region:

- Significant – Major Residual Effect – Effects are long-term, major and affect a whole community.
- Potentially Significant – Moderate Residual Effect – Effects which fall between “major” and “minor”, and thus are “potentially significant”. Essentially, the effect is either (a) medium or long-term, moderate and affecting a partial community, or (b) short-term, major and affecting a whole community. In order to determine significance of these effects, additional factors will often need to be considered, e.g., concurrent effects on other socio-economic components affecting the same group of people or others in the same socio-economic region, effectiveness of mitigation measures and the degree to which the affected people have any control over mitigation (which may reflect “vulnerability” in socio-economic terms), the extent to which the socio-economic component is affected by the Project (magnitude, frequency, and reversibility of the effect), and overall confidence in the assessment after consideration of potential mitigation and other factors.
- Not Significant or Insignificant – Minor Residual Effect – Effects are either (a) short-term and not major, or (b) localized and not moderate or major.
- Not Significant or Negligible (insignificant) Residual Effect – No definable effect at any level or is insufficient to be termed a minor effect, and generally indistinguishable from projected baseline conditions.

In many instances, determining the significance of Moderate Residual Effects requires assessment of additional factors. For example, increased employment and training opportunities in a community (a positive moderate effect) may also lead to in-migration that places stress on community infrastructure such as housing (an adverse moderate effect to the extent that materially increased overcrowding is likely to occur). When assessing the “significance” of the moderate adverse effect (stress on community infrastructure) in this example, it is relevant to:

- Note that in-migration is expected to be associated with people who are seeking to secure employment and/or training opportunities

- Review carefully the mitigation measures committed (e.g., will people who move be well aware of the problems and elect to move anyway, or will they be surprised by the problems; will steps be taken, to the extent that is reasonable, by the community to mitigate the adverse effect through information programs and/or other measures), and
- Review carefully the extent to which the people affected by the overcrowding and/or the affected community are able to exert controls to mitigate these effects.

On balance, for this type of example, the “moderate adverse effect” will not be assessed as “significant” when the affected community and/or group can control the commitment of reasonable mitigation measures to address the adverse effect.

In accordance with the EIS Guidelines, where significant *adverse* effects are predicted for socio-economic environmental effects (as defined by *CEAA*), the likelihood of significance is discussed in terms of both the probability of occurrence and the degree of “scientific uncertainty”. In many cases, the likelihood of significance is dependent upon the outcome of mitigation strategies (e.g., access management plans to manage potential adverse effects related to new road access). In this context, [Table 2.4](#) defines an assessed significant adverse effect as “moderately likely” when there is a material uncertainty that the effect will in fact end up being “significant”.

While the significance of all socio-economic effects is important for many purposes, the *CEAA* Reference Guide (see section 1.1 above) points out that not all socio-economic adverse effects are defined as “environmental effects” under *CEAA*. The *CEAA* test requires a determination as to whether a residual effect is a “significant adverse environmental effect” that is likely to be caused by the Project. Only socio-economic effects caused by a change in the biophysical environment which, in turn, has been caused by the Project are “environmental effects” as defined in *CEAA*. In the above example, the adverse in-migration effect would not be caused by a change in the biophysical environment but rather by another type of change related to the Project; accordingly, this adverse effect is not an “environmental effect” and therefore, regardless of its significance, could not be a “significant adverse environmental effect” within the meaning of *CEAA*.

Table 2.4 Definitions for Likelihood of Significance as Applied to Significant Adverse Residual Socio-economic Effects

Rating	Likelihood of Significance
Highly Likely	The effect is probable and there is limited uncertainty based on previous experience and local knowledge.
Moderately Likely	The effect is considered likely to occur, but there is material uncertainty that it will be significant, based on previous experience and local knowledge (this uncertainty may relate to the possibility that mitigation measures will be able to prevent the outcome of significant effects).
Not Likely	The effect has a small probability of occurring and there is little uncertainty based on previous experience and local knowledge.
Unknown	There is insufficient experience and local knowledge to predict the probability of the effect occurring and it is difficult to determine the probable outcome of mitigation measures.

2.2.9 Identify Monitoring and Follow-up

Measures for monitoring and, where necessary, following up on predicted Project effects were identified in order to:

- Provide timely information to assist in management of effects, particularly in cases where actual effects are uncertain (e.g., in-migration to Nelson House during pre-construction and construction phases).
- Assess the effectiveness of mitigation and enhancement measures during both construction and operations phases.
- Confirm actual effects, and identify any unanticipated effects.

The monitoring procedures identified were developed in consultation with Manitoba Hydro and NCN.

3.0 ECONOMY

This section considers effects on people’s economic activities including employment, business and resource harvesting activity. It addresses the socio-economic components set out in Section 6.4.2 of the EIS Guidelines⁷:

- “a general description of the economic base of Aboriginal and other communities potentially affected by the project shall be provided including the state of the labour force, employment, unemployment and a profile of existing economic sectors; and
- sufficient detail regarding the existing economy of the region shall be provided in order to predict the effect of the project on the economy of Aboriginal and other affected communities.”

Economic activity is important to the survival of people and contributes significantly to quality of life. The level of income, derived from both monetary (e.g., wages and government transfers) and non-monetary (e.g., country food) sources, affects the standard of living of families and households. Income affects access to basic human needs - housing, food and clothing - and is linked to human health. Where and how people make a living is intimately bound up with their way of life; work activity can shape the way of life and, ultimately, the culture of a community as a whole.

For communities as a whole, the local economy is usually a central element in planning for the future; community goals often include improvements in economic activity, employment and standard of living for residents, along with other elements of quality of life, including long-term sustainability of resources, environmental quality, social well-being and others. Economic opportunities, or lack of same, can be one reason (there can be many reasons) for adults and their families to migrate from one location to another, affecting requirements for governments to respond with public housing (in some cases) and other public facilities and services (e.g., health care, education, day care, recreation). Local and provincial public finances can be affected, including instances where declining population and economic activity shrink the tax base.

The Project has the potential to affect in a material way the economy of the Local Region and, to a lesser extent, the economies of communities located in the Project Region and

⁷ The EIS Guidelines for the Project show this incorrectly as Section 6.3.2.

Northern Region. Construction-phase effects on the provincial and national economies are also expected.

Potential direct effects of the Project are expected from participation in construction-phase employment opportunities and contract services required to build the proposed generating station and associated infrastructure, including construction camp, work area and access road. Participation is anticipated by residents of the Local Region, Project Region and Northern Region, as well as workers and firms elsewhere in Manitoba and Canada.

Much more limited direct effects, mainly for residents of the Local Region, are also possible through participation in limited operations phase employment and contracting opportunities. In addition, if NCN takes up the opportunity to participate in ownership of the generating station, return on that investment would be expected during the operations phase. This, in turn, is likely to have economic effects on the economy of the Local Region.

Indirectly, the Project is also expected to affect the current and future resource-based economy of the Local Region as a result of physical and biophysical changes from the Project to resources used by people (both commercially and domestically), including through new access to the Wuskwatim Area and possibly the area south of the Burntwood River. (Detailed analysis of the effects of the Project on resource use is provided in [Volume 7](#) of the EIS.)

This section reviews effects of the Project on economies in the Local Region, Project Region, Northern Region and Manitoba (including Manitoba Hydro) and Canada. It includes consideration of employment, training and business effects, effects on the resource economy in the Local Region (based on more detailed analysis in [Volume 7](#) of the EIS) and effects on the Manitoba and Canada economies. Major subsections in this section include the following:

1. Approach and Methodology
2. Local Region
3. Project Region
4. Northern Region
5. Manitoba and Canada.

3.1 APPROACH AND METHODOLOGY

The approach and methodology used for assessing economic effects varied according to topic, region and Project phase (construction versus operations). These are discussed below.

3.1.1 Estimating Employment Effects

Project effects related to employment will primarily be felt during the construction phase when employment reaches a peak of about 540 workers. Operations phase employment will be much smaller, with between two to six employees normally required (including three or four technicians and two utility workers) at the automated facility. Employment effects have also been felt throughout the Project's planning phase, which began in 1997.

To forecast levels of employment for Region residents during Project construction, the estimated available supply of workers (number of people with skills and experience that qualify them for construction positions) was compared to the estimated construction workforce to determine the approximate number of construction positions that could be secured by residents of the regions being studied. The analysis is based on the maximum number of positions at peak⁸ for each trade and skill classification during each construction stage – infrastructure development (Years 1 and 2) and **major works construction** (Years 3 to 6). The percentage of peak employment was used to estimate potential **person-years** of employment in the Local, Project and Northern Regions.

Factors affecting Project employment are outlined in Section 3.1.1.1 below, followed by an overview of the Project's expected employment requirements in Section 3.1.1.2.

3.1.1.1 Factors Affecting Project Employment Effects

Employment effects for residents in each of the study regions (and particularly in the Local Region and Project Region) were predicted based on estimates of current workforce capacity, Project requirements, experience and training gained through Stage 1 construction employment that are relevant to Stage 2 employment, and consideration of three additional factors:

⁸ The peak number of jobs measure does not capture the duration of employment opportunities such as person-years of employment. Because the analysis is based on the maximum peak level of employment for *each* occupational classification, the totals cannot be added to calculate the peak number of positions for the overall workforce. The maximum peaks for all classifications do not occur simultaneously.

1. Pre-Project training – Pre-project training can enhance local capacity to secure project jobs. Relevant budgets and plans involve annual reviews and updates to reflect experience to date; furthermore, actual outcomes of training programs are not certain. Accordingly, estimates of employment effects consider possible ranges for pre-project training effects.
2. Negotiated Contracts – Negotiated contracts, assumed to be only with qualifying NCN contractor(s), may enable these firms to hire northern Aboriginal residents directly without going through any normal job hiring process affected by preference policies, i.e., these contracts could enhance NCN employment opportunities.⁹ No contracts have yet been negotiated, and, therefore, the current estimates for employment effects assume that certain contracts will be negotiated with NCN, particularly for much of the infrastructure construction in Years 1 and 2 (e.g., construction of the access road and construction camp) and potentially for other contractors during Years 3 to 6 (e.g., catering and security).
3. First Preference policy for hiring – The job hiring preference for qualified workers can affect the degree to which NCN members living in the Local Region or residents of other regions can secure specific project jobs (in particular, preference is expected to affect jobs not covered by negotiated contracts where required pre-project training and experience is less than 24 months). In advance of a renegotiated BNA, employment estimates have been prepared based on a possible “first preference” hiring scenario. The preference hiring scenario assumed for this analysis is as follows:
 - a. First preference – Aboriginal residents of communities in the Project Region, as defined by the Burntwood River and Nelson River and including: the First Nations of NCN (includes members resident at South Indian Lake), Tataskweyak Cree Nation (TCN), War Lake First Nation, Fox Lake Cree Nation, York Factory First Nation, Pimicikamak Cree Nation (PCN), Cross Lake First Nation, and Norway House Cree Nation; Northern Affairs Aboriginal communities in the region (including South Indian Lake, Nelson House, Thicket Portage, Pikwitonei, Wabowden, Cross Lake and Norway

⁹ Article 2.9 of the existing Burntwood Nelson Agreement (BNA) enables northern Aboriginal contractors with negotiated contracts to directly hire northern Aboriginal residents without having to go through the job order process to which the northern employment preference applies. The BNA is currently being renegotiated.

- House) and Aboriginal residents of incorporated communities (Thompson and Gillam).
- b. Second Preference – Other qualified Aboriginal residents in the overall “Northern Employment Preference Area” (as defined in the current Burntwood-Nelson Agreement (BNA) (1989)).
 - c. Third Preference – Qualified northern resident members of the **Allied Hydro Council** unions.
 - d. Fourth Preference – Other qualified residents of northern Manitoba. If no qualified northern residents are available to fill a position it is then assumed that the position will be advertised to all qualified members of the Allied Hydro Council **unions**, regardless of their location, and finally to all qualified applicants.
4. Experience with construction of the Limestone Generating Station – Experience from the Limestone Generating Station Project, the most recent large-scale hydroelectric development to be built in northern Manitoba, provides an indication of the trends, issues and concerns that may arise as a result of construction employment on northern projects like the Project.

3.1.1.2 Project Construction Employment Requirements

The Project will be constructed over six years and will occur in two main stages:

- Stage 1 – Infrastructure Development (Years 1-2): This stage will take place during the first two years and will involve construction of the access road, construction camp, work areas, water and sewer systems and other infrastructure. It is expected that most of the negotiated contracts with NCN will be carried out during this stage.
- Stage 2 – Major Works Construction/Installation (Years 3-6): This stage, to take place during Years 3 through 6 of construction, involves construction of the major Project works, including the temporary and permanent dams, powerhouse, generators, turbines and gates.

The construction site for the Project will be unionized and operate under a renegotiated Burntwood Nelson Collective Agreement (BNA). The BNA is currently being renegotiated between the **Hydro Projects Management Association** and the Allied Hydro Council of Manitoba and was not finalized at time of EIS submission.

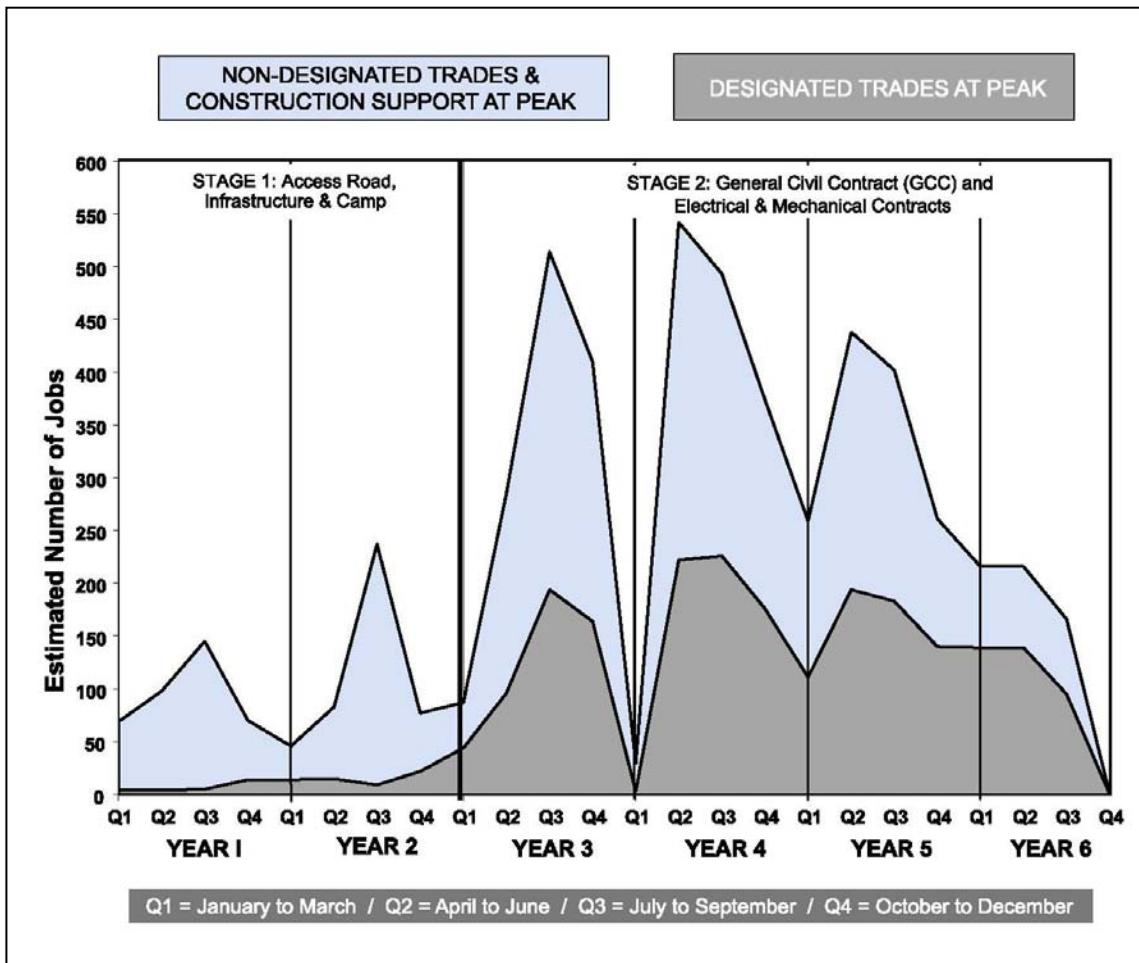
Contractors engaged by Manitoba Hydro will employ over 90 per cent of the Project construction workforce. The vast majority of contractor jobs will be filled through the **job order process**, to be set out in the renegotiated BNA. A small number of supervisory/management positions will be out-of-scope of the BNA and will be hired directly by the contractor and the remaining positions will be internally hired by Manitoba Hydro staff. Aboriginal contractors with negotiated contracts (assumed to be only NCN) may also be able to directly hire northern Aboriginal employees through provisions in the BNA. Under the job order process, it is anticipated that Manitoba **Advanced Education and Training (AET)** will act as the referral agency for the Project, with sole responsibility for handling job orders from contractors. AET would establish a referral system before construction gets underway (it has not yet been established). Northern residents would be able to register in AET's applicant database for Wuskwatim employment at one of their referral offices. Thompson would likely be the central referral office and a satellite referral office would be located in Nelson House. Additional satellite offices may be established in other northern communities; however, their locations have not yet been determined.

[Figure 3.1](#) below provides a quarterly breakdown of the estimated construction workforce requirements to be filled through the job order process during each stage of construction. The figure indicates that construction jobs will vary over the six years of construction, and most jobs will be seasonal in nature. Two general types of positions will be available and the training and experience required for each varies:

- **Designated Trades Positions**: These positions have apprenticeship programs typically requiring four years of technical training and work experience leading to a journeyman certification. Among the designated trades positions required for the Project, carpenters will be in high demand during Years 3 and 4, and by the second half of Year 4 a sizeable number of electricians, pipe fitters, millwrights, and iron workers will be needed. Based on the current BNA, it is anticipated that apprentices will account for an average of 20 per cent of the Project's designated trades positions. To qualify for an apprentice position, a person will typically require three or more years of training and work experience.
- **Non-designated Trades and Construction Support Positions**: These occupations, which do not have apprenticeships, account for almost all of the job order positions available during Stage 1 (Years 1-2), and continue to account for significant numbers during Stage 2 (Years 3-6), including labourers, heavy equipment operators, vehicle

drivers (teamsters), rebar workers, cement masons, catering and clerical staff. Most of these positions require less than three years of related work experience, and about 45 per cent require one year or less of related work experience.

Figure 3.1 Estimated Project Construction Workforce at Peak (Positions Filled Through Job Order Process)

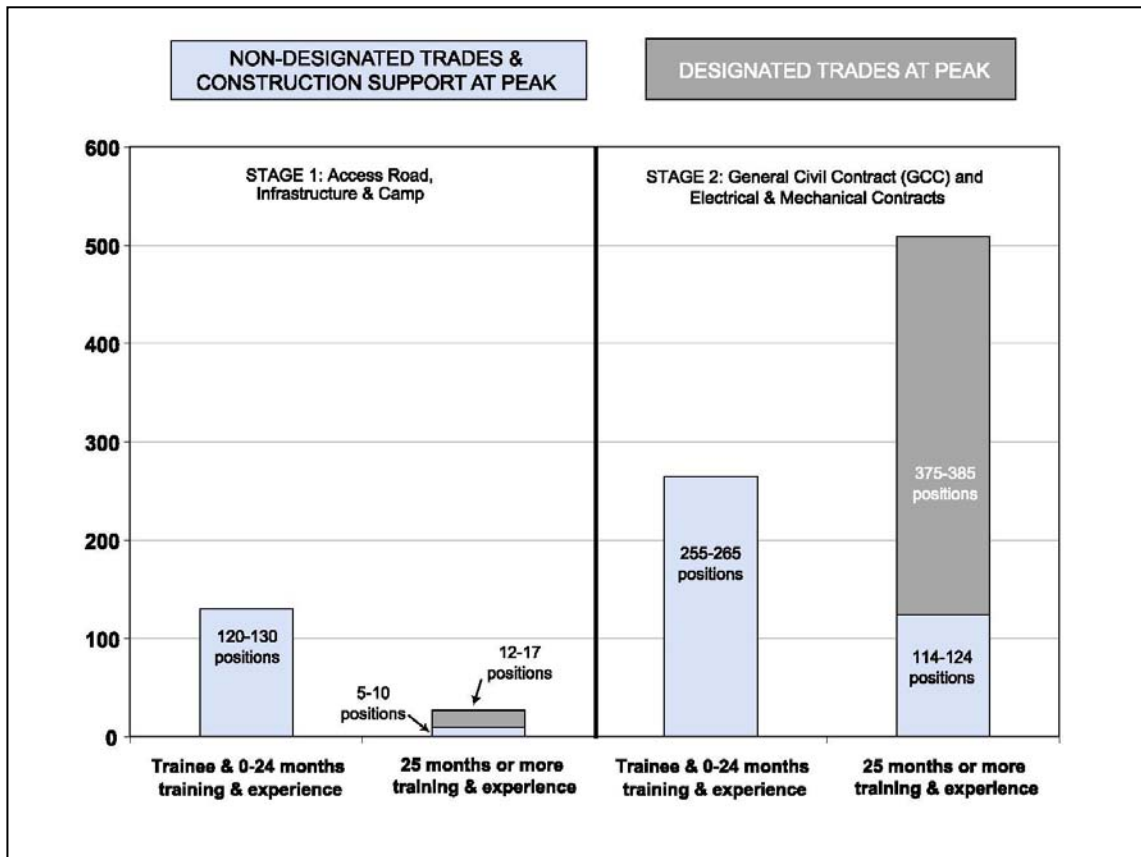


Notes:

- 1 - The above information represents an estimate only, based on current regulations, Project plans as of 2002 and past experience with similar projects. Contractors will determine specific job requirements when the Project is being built. Actual workforce requirements will vary from the estimate presented above.
- 2 - Illustrates jobs potentially filled by job orders. Excludes Manitoba Hydro staff and contractor supervisory and management positions.
- 3 - Designated trades are those in which individuals take apprenticeship training to become certified journeymen (usually at least four years). Based on the current BNA, apprentices are expected to account for an average of 20 per cent of designated trades positions - and Project employment requires apprentices to typically have more than two years training and experience (typically at least 36 months)

Figure 3.2 provides a breakdown of available employment opportunities during Project construction by training and experience requirements. Table 3.1 provides a further breakdown of employment opportunities available during construction by training and experience requirements for key occupational categories and for each stage of construction.

Figure 3.2 Estimated Project Construction Workforce at Peak by Training & Experience Requirements (Not all positions will occur simultaneously. Actual workforce at any given time will be lower.)



Notes:

- 1 - The above information represents an estimate only, based on current regulations, Project plans as of 2002 and past experience with similar projects. Contractors will determine specific job requirements when the Project is being built. Actual workforce requirements will vary from the estimate presented above.
- 2 - Illustrates jobs potentially filled by job orders. Excludes Manitoba Hydro staff and contractor supervisory and management positions.
- 3 - Designated trades are those in which individuals take apprenticeship training to become certified journeymen (usually at least four years). Based on the current BNA, apprentices are expected to account for an average of 20 per cent of designated trades positions - and Project employment requires apprentices to typically have more than two years training and experience (typically at least 36 months)

Table 3.1 Estimated Peak Workforce Requirement for Project Construction

Occupational Category	STAGE 1 (Years 1-2): Infrastructure Construction					STAGE 2 (Years 3-6): Major Works Construction					
	Trainee Positions	0-6 mos.	7-12 mos.	1-2 years	>4 years	Trainee Positions	0-6 mos.	7-12 mos.	1-2 years	3-4 years	>4 years
NON-DESIGNATED TRADES											
Labourers	5	4	19	7	--	16	10	57	21	--	--
Equipment Operators	8	--	4	33	5	4	--	--	8	19	--
Teamsters	5	--	2	23	1	4	--	2	16	6	--
Serviceemen	0	--	3	--	--	1	--	4	--	--	--
Driller/Blaster	0	--	--	2	--	2	--	--	26	--	14
Rebar Workers	--	--	--	--	--	7	--	--	--	40	--
Cement Masons	--	--	--	--	--	6	--	--	--	33	--
CONSTRUCTION SUPPORT											
Security	--	--	--	--	--	0	4	--	2	--	--
Catering	3	6	6	0	2	8	17	17	1	7	1
Clerical/ Technical	--	--	--	--	--	5	--	9	18	4	--
DESIGNATED TRADES - (Note: Positions in the Designated Trades requiring only 2-4 years training & experience are apprentices)											
Mechanics					0	4				0	4
Carpenters					1	5				34	137
Plumbers					0	4				0	1
Pipe Fitters					--	--				6	22
Electricians					0	3				17	69
Millwrights					--	--				6	26
Iron Workers					--	--				9	38
Sheet Metal Workers					--	--				1	3
Painters					--	--				0	2
Roofers					--	--				0	2
Lathers (Drywall Installers)					--	--				0	0
Tile Layer					--	--				0	2
Insulation Mechanic					--	--				0	2
Grouter					--	--				0	4
No designated trades positions in these categories											
No designated trades positions in these categories											

Table 3.1 Estimated Peak Workforce Requirement for Project Construction Cont'd

Occupational Category	STAGE 1 (Years 1-2): Infrastructure Construction					STAGE 2 (Years 3-6): Major Works Construction						
	Amount of Training & Job Experience Required					Amount of Training & Job Experience Required						
	Trainee Positions	0-6 mos.	7-12 mos.	1-2 years	>4 years	Trainee Positions	0-6 mos.	7-12 mos.	1-2 years	3-4 years	>4 years	
MAX Non-designated Trades Positions	18	4	28	65	2	40	10	63	71	98	14	
MAX Construction Support Positions	3	6	6	0	2	13	21	26	21	11	1	
MAX Designated Trades Positions	<i>No designated trades positions in these categories</i>					<i>No designated trades positions in these categories</i>					73 (app.)	312

Notes:

- 1 - The information in the above tables represents an estimate only, based on current regulations, Project plans as of September 2002, and past experience with similar projects.
- 2 - Illustrates jobs potentially filled by job orders. Excludes Manitoba Hydro staff and contractor supervisory and management positions.
- 3 - Participation in pre-Project skill training, or equivalent experience, is normally required to be eligible for trainee positions in the contractor's workforce.
- 4 - The present BNA (it is currently being renegotiated) permits up to a maximum of 20 per cent of construction support and non-designated trades positions to be filled by trainees. Work scheduling will mean that the actual number of trainee positions will be somewhat less than the allowable maximum at any given time.

In total, the employment represented by peak job order positions equates to 113.1 person-years of employment during Stage 1 (Years 1 and 2) and 995.9 person-years employment during Stage 2 (Years 3 to 6), for a Project total of 1,109 person-years of employment through job-order positions.

[Table 3.2](#) below provides a breakdown of the person-years of employment that could be available through job order positions during each of the stages of Project construction.

Table 3.2 Estimated Person-years of Employment for Wuskwatim Generating Station Construction by Occupation and Construction Stage

Occupational Category	ESTIMATED PERSON-YEARS OF EMPLOYMENT					
	STAGE 1 (Years 1-2) - Infrastructure Construction			STAGE 2 (Years 3-6) - Major Works Construction		
	Amount of Training & Job Experience Required			Amount of Training & Job Experience Required		
	Trainees & 0-24 months	>24 months		Trainees & 0-24 months	>24 months	
Construction Support						
Technical	0.0	0.2	40.9	4.5		
Clerical	0.0	0.0	28.7	3.2		
Catering	10.8	1.9	100.6	20.6		
Security	0.0	0.0	24.0	0.0		
Sub-total	10.8	2.1	194.2	28.3		
Non-Designated Trades						
Labourer	20.5	0.0	170.3	0.0		
Driller/Blaster	2.0	2.0	10.7	5.3		
Equipment Operator	33.6	3.7	17.8	29.1		
Teamster	24.0	0.5	31.2	9.3		
Serviceman	1.2	0.0	4.0	0.0		
Rebar Worker	0.0	0.0	5.2	29.2		
Cement Mason	0.0	0.0	4.6	26.2		
Utilityman/Groundman	0.0	0.0	0.0	0.0		
Lineman	0.0	0.0	0.0	0.0		
Sub-total	81.3	6.2	243.7	99.1		

Table 3.2 Estimated Person-years of Employment for Wuskwatim Generating Station Construction by Occupation and Construction Stage Cont'd

Occupational Category	ESTIMATED PERSON-YEARS OF EMPLOYMENT			
	STAGE 1 (Years 1-2) - Infrastructure Construction	STAGE 2 (Years 3-6) - Major Works Construction		
	Amount of Training & Job Experience Required	Amount of Training & Job Experience Required		
	Trainees & 0-24 months	Trainees & 0-24 months	>24 months	>24 months
DESIGNATED TRADES				
<i>(Note: Apprentice positions are included in category requiring >24 months of Training & Experience)</i>				
Mechanic	No designated trades positions in these categories	4.0	No designated trades positions in these categories	12.1
Carpenter		4.2		132.3
Millwright		0.0		37.3
Iron Worker		0.0		57.4
Sheet Metal Worker		0.0		1.7
Pipe Fitter		0.0		43.5
Plumber		2.7		0.9
Electrician		2.0		134.5
Glazier		0.0		0.4
Painter		0.0		1.9
Roofer		0.0		1.4
Tile Layer		0.0		2.6
Insulation Mechanic		0.0		3.1
Grouter		0.0		1.3
Tradesman		0.0		0.0
Sub-total	0.0	12.8	0.0	430.5

Table 3.2 Estimated Person-years of Employment for Wuskwatim Generating Station Construction by Occupation and Construction Stage Cont'd

Occupational Category	ESTIMATED PERSON-YEARS OF EMPLOYMENT		
	STAGE 1 (Years 1-2) - Infrastructure Construction	STAGE 2 (Years 3-6) - Major Works Construction	
	Amount of Training & Job Experience Required	Amount of Training & Job Experience Required	
	Trainees & 0-24 months	Trainees & 0-24 months	>24 months
Workforce By Training & Experience	92.0	437.9	558.0
Total Employment By Stage	113.2		995.9

Notes:

- 1 - The information in the above tables represents an estimate only, based on current regulations, Project plans as of July 2002, and past experience with similar projects.
- 2 - Illustrates jobs potentially filled by job orders. Excludes Manitoba Hydro staff and contractor supervisory and management positions.
- 3 - Participation in pre-Project skill training, or equivalent experience, is normally required to be eligible for trainee positions in the contractor's workforce.
- 4 - The present BNA (it is currently being renegotiated) permits up to a maximum of 20 per cent of construction support and non-designated trades positions to be filled by trainees. Work scheduling will mean that the actual number of trainee positions will be somewhat less than the allowable maximum at any given time.
- 5 - Of the total work for designated trades, approximately 0.8 person-years of employment could go to apprentices during the Stage 1 construction and 81.4 person-years during Stage 2 Construction. Based on the current BNA, apprentice employment is expected to be one apprentice for every three to four journeypersons on extended work contracts (two months or more). Actual apprentice/journeyperson ratios will vary depending on the contract and trade in question. It is expected that apprentices on the Project would typically require more than two years training and experience (typically at least 36 months)

3.1.2 Estimating Business Effects

As with employment effects, business effects stemming from the Project will primarily be felt during the construction phase, when contracts with outside agencies for construction work are at their maximum. Operations phase business opportunities will be limited to relatively small maintenance contracts for Project buildings and infrastructure and employment levels will be of a much smaller magnitude (normally from two to six employees will be required (including three or four technicians and two utility workers) at the automated facility).

To forecast the business effects of Project construction, it was assumed that NCN businesses would participate through a range of negotiated contracts during all construction years. Negotiated contracts, although still under discussion, were assumed to include: various infrastructure contracts, namely access road construction, clearing and grubbing, various camp-related contracts, catering, and access control and security; and specific work packages during major works construction, including catering, certain materials transportation services and various camp-related contracts. NCN members are also expected to take up the limited range of additional entrepreneurial opportunities associated with the construction project.

Throughout the rest of the North, business effects during Project construction were assessed by comparing the remaining contracts (i.e., those not assumed to be negotiated with NCN; anticipated to be let under restricted or open **tendering**) to the availability and estimated capacity of other northern construction businesses, both Aboriginal and non-Aboriginal. The availability and capacity of other northern businesses were determined through a review of published sources, as well as interviews with key persons familiar with northern businesses.

During operations, available maintenance contracts for Project buildings and infrastructure could provide additional opportunities for business participation in the Local and Project Regions.

Indirect business effects (e.g., possible worker re-spending) during Project construction were estimated based on recorded experience with past projects of similar magnitude. Of particular importance in this regard were the indirect business effects estimated for the Limestone Generating Station for the communities of Gillam and Thompson (Mazur 1990). No indirect business effects are anticipated during project operations.

3.1.3 Estimating Training Effects

For the Local Region, training effects were assessed based on the objectives and plans outlined in the *NCN Proposal – ATEC and Related Training Activity* (a proposal submitted to Manitoba Hydro and the governments of Manitoba and Canada to secure funding for proposed pre-Project training activities), current levels of training/education in Nelson House, experience with pre-project training for similar projects in the past and possible on-the-job training opportunities that could be secured by Aboriginal residents in the Local Region.

In the rest of the North, training effects were assessed based on the extent and scope of pre-Project training expected to be available, experience with pre-project training for similar projects in the past and possible on-the-job training opportunities that could be secured by other Northern Aboriginal residents outside of the Local Region.

3.1.4 Estimating Effects on the Resource Economy

Project-related effects on the resource harvesting economy are detailed in [Volume 7](#), and summarized in the Economy environment section below. Resource economies potentially affected by the Project are limited to the commercial and domestic resource harvesting economies in the Local Region. Potential Project effects during construction relate to improved access, disturbances and habitat loss, the influx of workers to the Project area, and changes in lifestyle among residents of the Local Region as a result of participating in Project employment. Potential Project effects during the operations phase of the Project relate primarily to improved access and changes in water level regime.

3.1.5 Determining the Effects of Ownership Participation

Project effects related to investment in the Project are assessed only with regard to NCN's potential ownership interest and subsequent effects anticipated during the operations phase. The effects assessment is based on understandings to date between NCN and Manitoba Hydro, and is subject to any changes that may be included in the final **Project Development Agreement (PDA)** between these partners.

3.2 LOCAL REGION

3.2.1 Sources of Effect

In the Local Region, Project-related sources of effect on the economy differ for each Project phase (construction versus operations) and include:

- Employment opportunities associated with the Project (construction phase and, to a much lesser extent, operations phase). It is anticipated that NCN members living in the Local Region will secure a majority of available job opportunities during the first stage of construction (Years 1 and 2) as a result of pre-Project training and contracts anticipated to be directly negotiated with qualifying NCN businesses. During the second stage of construction (Years 3 to 6), the extent of NCN participation in the Wuskwatim workforce will depend on the effect of pre-Project training opportunities, directly negotiated contracts and the possible hiring preference policy for the Project.
- Business participation in the Project through negotiated contracts (construction phase). Participation by NCN businesses in construction of the Project is anticipated to come through negotiated contracts with qualifying NCN businesses.
- Pre-Project and on-the-job training and retention opportunities associated with the Project (construction phase). In the Local Region, pre-Project training opportunities are currently being developed by NCN, who has taken on responsibility for developing and implementing pre-Project training activities for its members. On-the-job training opportunities will be provided by Project contractors for principal occupations where there is opportunity for extended work (e.g., jobs of at least two months or more in duration); in addition, NCN and Manitoba Hydro expect to implement arrangements to enhance retention of northern Aboriginal employees who are hired on the Project.
- Physical and biophysical changes to resources used by people, both commercially and domestically which, in turn, could effect the local resource economy (construction phase and operations phase). The Project will cause changes to water levels and flows in the Wuskwatim area, and will provide increased access into the Wuskwatim area (as a result of the Project access road) and to areas south of the Burntwood River (as a result of travel over the dam). These, in combination with possible lifestyle changes brought on by Project employment, may lead to changes in resource harvesting levels by NCN members.

- NCN Ownership Participation in the Project and the stream of revenue that may accrue from this investment (operations phase). The understandings between NCN and Manitoba Hydro to date set out anticipated arrangements for NCN to own up to 33 per cent of the Partnership for the Project. As a result of this investment, NCN is expected to receive annual dividends from the Project. The magnitude of annual dividend payments will depend on NCN's level of cash investment in the Partnership, the Project's profitability and the final terms agreed upon in the PDA.

3.2.2 Existing Environment

The economy of the Local Region is based primarily on providing goods and services to the resident population of Nelson House and to other communities in the region. Wage employment in Nelson House is found primarily in the areas of government services, education services and health and social services. In South Indian Lake, the main sources of employment are in education and government services, and commercial fishing and trapping. NCN also has a growing commercial economy, which includes investments by the First Nation and its members in businesses in both Nelson House and Thompson.

In the Nelson House Resource Management Area (RMA), commercial and domestic resource harvesting were once the mainstay of the Nelson House economy, but their relative importance to the local economy, in terms of dollar value, has diminished in recent years. Despite this, substantial numbers of NCN members continue to participate in traditional resource-based activities throughout the Nelson House RMA that provide both cash and income-in-kind for many residents. These activities continue to be important for economic, social and cultural reasons and there are efforts to encourage greater participation in them.

The following sections characterize the existing economy of the Local Region (see [Appendix 1](#), Socio-Economic Baseline Setting, for detailed setting), and include:

- Labour force characteristics for residents of the reserve community at Nelson House and the Northern Affairs community of South Indian Lake, including employment, participation and **unemployment rates**, levels of education and income levels and sources. Comparable data for the Northern Affairs community of Nelson House were not available.
- Profile of the role of resource harvesting in the Nelson House RMA in the local economy.

- Profile of the growing business sector based out of the reserve community of Nelson House. (Businesses in South Indian Lake have not been included because, given the scope and size of these businesses, they are not expected to experience effects from the generating station project.)

3.2.2.1 Labour Force Characteristics

Employment, Participation and Unemployment Rates

In order to provide an overview of the existing labour force (those age 15 and over), characteristics of the labour force of the reserve community at Nelson House and the Northern Affairs community of South Indian Lake are compared to characteristics of the provincial labour force as a whole. [Table 3.3](#) presents data from the 1996 Census¹⁰, the last Census year for which labour force data have been published (data from the 2001 Census for these characteristics have not yet been released). Comparable data for the small Northern Affairs community of Nelson House, with a resident population of about 77, were not available.

Based on these data, the population of labour force age (those age 15 and over) in both Nelson House and South Indian Lake can be characterized as having lower participation¹¹ in the labour force than the provincial population. Lower participation is, in part, due to the lack of opportunities available in the Local Region (i.e., many people typically “give up” looking for work when it is apparent that no opportunities are available). Unemployment rates calculated by Statistics Canada show that, overall, unemployment is up to six times higher in Nelson House and South Indian Lake than in the Province as a whole. These data tend to underestimate unemployment because rates are based on those considered to be participating in the labour force (known as the **active labour force**), which is typically underreported, as noted above.

¹⁰ The 2001 Census data have recently become available, and are being reviewed to confirm that a complete and consistent data set can be provided for all communities and regions under review in the SEIA. If feasible, the 2001 data may be added to Volume 8 at a later time.

¹¹ Participation is defined as those working or actively looking for work in the week prior to the Census and those participating in the labour force are known as the active labour force.

Table 3.3 Employment, Participation and Unemployment Rates in the Labour Force of Nelson House, South Indian Lake and the Province of Manitoba, 1996

Characteristic	Local Region						Manitoba		
	Nelson House			South Indian Lake			Total	Male	Female
	Total	Male	Female	Total	Male	Female			
Potential Labour Force	1,070	565	505	515	285	235	855,880	416,755	439,125
Active Labour Force	465	275	195	210	155	60	567,825	306,670	261,155
• Employed	250	125	130	150	100	50	523,210	280,615	242,600
• Unemployed	210	150	60	65	55	10	44,615	26,055	18,560
Persons Not in the Labour Force	605	290	310	305	125	175	288,055	110,085	177,970
Participation Rate	43.5%	48.7%	38.6%	40.8%	54.4%	25.5%	66.3%	73.6%	59.5%
Employment Rate	53.7%	45.5%	69.2%	69.0%	64.5%	83.3%	92.1%	91.5%	92.9%
Unemployment Rate	45.2%	54.5%	30.8%	31.0%	35.5%	16.7%	7.9%	8.5%	7.1%

Source: Statistics Canada 1996 Census of Canada.

Notes:

- 1 - Data incomplete: 20 per cent sample data.
- 2 - Totals may not add due to rounding.
- 3 - Statistics Canada defines the potential labour force as all persons in a given population, excluding institutional residents, age 15 years and over.
- 4 - The active labour force includes all persons 15 years of age and over, excluding institutional residents, who, during the week (Sunday to Saturday) prior to Census Day were either employed or unemployed.
- 5 - The "employed" include all persons who "worked for pay or in self-employment" in the paid labour force in the week prior to enumeration. This includes all persons working for wages or salaries, all self-employed persons (with or without paid help) working in their own business, farm or professional practice, and all persons working without pay on a family farm or business during the reference week. The "employed" also include those persons absent from their job or business for the entire week because of vacation, illness, a labour dispute at their place of work or other reasons.
- 6 - The classification of unemployed does not account for the underemployed, or those individuals working part time but desiring a full time position. As well, the classification does not include discouraged workers: those individuals who wish to work but have ceased looking because they do not believe they will find a job. Unemployment numbers may be understated for these reasons.

More recent data from Indian and Northern Affairs Canada (INAC) place the total **potential labour force** of NCN members on-reserve in 2000 at approximately 1,247 individuals (659 males and 588 females). It is projected that by 2011, the potential labour force in Nelson House will have reached between 1,800 and 2,000 individuals (about a 40 to 50 per cent increase) (see [Appendix 1](#), Section 2.1.1.5 for population projections). This would mean an estimated active labour force at that time of between 900 and 1,100 individuals.

These same data place the potential labour force of NCN members living on Crown land (primarily South Indian Lake and the Northern Affairs community of Nelson House) at

613 individuals (318 males and 295 females) in 2000. By 2011, it is projected that this potential labour force would increase to between 893 and 1,048 individuals (about a 45 to 70 per cent increase). This would mean an estimated active labour force of NCN members living on Crown land in 2011 of between 339 and 391 individuals.

The growing labour force in both Nelson House and South Indian Lake suggests that the significant need for employment opportunities, already apparent in the current labour force (as evidenced by high unemployment rates), is expected to grow substantially over the next seven to ten years.

As of 1996, the largest sources of employment in Nelson House were in the areas of government services, education services and health and social services. Together these accounted for 60 to 65 per cent of all local employment (Statistics Canada 1996). In South Indian Lake, the main sources of employment, as of 1996, were fishing and trapping, which accounted for 25 per cent of employment, as well as educational services and government services, which together accounted for 33 per cent of employment. (See [Appendix 1](#) (Section 2.2.1.1) for further details.)

Of particular interest in estimating possible participation in construction phase employment opportunities is the extent to which those with construction skills are present in the NCN labour force. Data from the NCN Housing Authority, NCN Human Resources Department, Nelson House Forest Industries (a construction firm based in Nelson House) and from an NCN Human Resources staff member in South Indian Lake indicate that there are pools of construction labour among NCN members resident at Nelson House and South Indian Lake (and to a lesser extent, at Thompson). These include members working in both non-designated and designated trades and are outlined in [Table 3.4](#) below. The availability of these construction workers varies and it is anticipated that only a subset of workers would find the opportunities for Wuskwatim construction employment to be attractive enough to give up their current construction work.

Table 3.4 Potential Sources of Construction and Construction Support Workers among the NCN Membership Located Mainly at Nelson House, the Nelson House Northern Affairs Community and South Indian Lake

Potential Sources of Construction Workers	Number of Workers by Occupational Category
Casual labour pool (mainly labourers who participate in housing construction)	<ul style="list-style-type: none"> • Approximately 100 Nelson House resident construction labourers • Approximately 7 labourers from South Indian Lake are now working on the South Indian Lake road • There are probably additional labourers among NCN members in Thompson
Housing construction apprentices	<ul style="list-style-type: none"> • Approximately 10 Carpenter apprentices, currently levels 1 and 2 in Nelson House • Approximately 5 Plumber apprentices, currently a mix of levels 1, 3 and 4 in Nelson House • 1 Plumber apprentice in South Indian Lake • Approximately 2 Electrical apprentices, currently levels 1 and 2 in Nelson House
Housing construction journeypersons	<ul style="list-style-type: none"> • 5 to 6 Carpenters in Nelson House • 2 Electricians in Nelson House • 2 Plumbers in Nelson House
Heavy duty and automotive mechanic journeypersons	<ul style="list-style-type: none"> • 3 in Nelson House
Heavy duty mechanic apprentice	<ul style="list-style-type: none"> • 1 in South Indian Lake
Nelson House Forest Industries (NHFI)	<ul style="list-style-type: none"> • Approximately 25 existing staff consisting of a mix of Equipment Operators, Teamsters and Mechanics. • NHFI also has a reserve pool of labour estimated at 10 somewhat experienced Operators & Teamsters
Clerical workers	<ul style="list-style-type: none"> • Approximately 7 in Nelson House • Approximately 3 in South Indian Lake
Catering	<ul style="list-style-type: none"> • 3 cooks in Nelson House • Approximately 15 to 20 in South Indian Lake with catering experience from work at the Big Sand Lake Lodge

Sources:

- 1 - NCN Human Resources in Nelson House, personal communication, 2002.
- 2 - NCN Human Resources in South Indian Lake, personal communication, 2002.
- 3 - NCN Housing Authority, personal communication, 2002.
- 4 - Nelson House Forest Industries, personal communication, 2002.

Levels of Education

Education is an important factor in assessing the extent to which Project construction employment opportunities may be filled by the labour force in the Local Region. Basic education levels for NCN members on-reserve and in South Indian Lake were determined using the 1991 and 1996 Census of Canada¹² and the NCN Opinion Survey – Total Sample in Nelson House and South Indian Lake.¹³ The results from these sources are presented below in [Table 3.5](#) and indicate that, overall, general levels of education are increasing in both communities. It should be noted that the survey results for the category “other non-university training with certificates” may be an overestimate because some survey respondents included certificates beyond the Statistics Canada definition.¹⁴

¹² The most recent years for which Census data were available. Data from the 2001 Census for these characteristics have not yet been released.

¹³ NCN Opinion Surveys ([see Appendix 3](#)) were undertaken by the NCN Future Development Team in the summer of 2000 in Nelson House and in the summer of 2001 in South Indian Lake. The purpose of the survey was to gain a better appreciation of the opinions and perspectives of NCN members about proposed future hydroelectric developments in the Nelson House Resource Management Area. The statistically-valid sample included questions about demographic characteristics; results can be applied to the community as a whole. Survey respondents were ages 16 and older.

¹⁴ Statistics Canada defines a Trade Certificate or Diploma as a Certificate or Diploma obtained through apprenticeship (journeyperson) training and/or in-school training in trades level vocational and pre-vocational courses at community colleges, institutes of technology and similar institutions where the minimum entrance requirement was less than secondary (high) school, junior or senior matriculation, or its equivalent (Statistics Canada, 1996).

Table 3.5 Highest Level of Education for Residents of the Reserve Community of Nelson House and the Northern Affairs Community of South Indian Lake, 1991, 1996 and 2000/2001

Level of Education	Percentage of total residents ages 15 and over					
	Nelson House			South Indian Lake		
	1991 Statistics Canada ^{1,2} (Total = 785)	1996 Statistics Canada ^{1,2} (Total = 1,070)	2000 NCN Opinion Survey (Total = 813)	1991 Statistics Canada ^{1,2} (Total = 415)	1996 Statistics Canada ^{1,2} (Total = 5,150)	2001 NCN Opinion Survey (Total = 137)
Less than Grade 9	41%	34%	23%	47%	33%	27%
Grades 9 to 12:	34%	43%	40%	41%	49%	53%
• Without Secondary School Graduation Certificate	31%	37%	30%	37%	45%	35%
• With Secondary School Graduation Certificate	3%	6%	10%	4%	4%	18%
Trades	4%	1%	7%	0%	2%	7%
Other Non-University Education Only	12%	11%	15%	7%	7%	12%
• Without Certificate Or Diploma	3%	5%	4%	2%	2%	N/A
• With Certificate Or Diploma	9%	7%	11%	5%	5%	N/A
University:	9%	12%	11%	2%	9%	4%
• Without Degree	5%	8%	8%	2%	7%	N/A
• With Bachelor's Degree or Higher	5%	3%	3%	0%	2%	N/A
Not Stated:	N/A	N/A	3%	N/A	N/A	0

Sources:

- 1 - Statistics Canada Census of Canada 1991, 1996.
- 2 - NCN Opinion Survey in Nelson House (2000) and South Indian Lake (2001).

Notes:

- 1 - Only 20 per cent sample data.
- 2 - Based on entire population at Nelson House (i.e., includes some non-NCN members) ages 15 and over.
- 3 - Totals may not add due to rounding.

Construction of the generating station will require a range of skills and experience. Apprenticeable trades of various kinds will be required for the Project. Data on the presence of apprenticeable trades skills in the Nelson House labour force were available from Manitoba Apprenticeship Branch and are outlined in Table 3.6 below. Similar data were not available for NCN members living at other locations in the province, including at South Indian Lake.

Table 3.6 Trades Training among NCN Members Living in Nelson House: 2001

Trade	Apprenticeship				Journeyman
	Level 1	Level 2	Level 3	Level 4	
Carpentry	<ul style="list-style-type: none"> 3 members have completed the required hours of work, but still need to complete classroom training 1 member has completed the hours required for Levels 1 and 2, but still needs to complete classroom training 	<ul style="list-style-type: none"> 1 member has completed the hours required for Levels 1 and 2, but still needs to complete classroom training 			<ul style="list-style-type: none"> 2 members have journeyman status 1 member is completing Level 5 and was expected to graduate as a journeyman in June 2001
Plumbing		<ul style="list-style-type: none"> 1 member has completed Level 2, but failed the Level 3 exam 		<ul style="list-style-type: none"> 2 have completed all of their Level 4 hours, but need to rewrite the in-class exam 	<ul style="list-style-type: none"> 2 members have journeyman status
Construction Electrician					<ul style="list-style-type: none"> 2 members have journeyman status

Source: Manitoba Apprenticeship Branch, May 2001 (obtained by NCN Human Resources Dept.).

Income Levels and Sources

Income is an important indicator of the results from economic activity. Statistics on income provide an indication of what is available to sustain the standard of living (basic needs and other goods and services) of residents of Nelson House. Examining sources of income contributes to a profile of the local economy.

Statistics Canada data from 1996¹⁵ provide an indication of at least the monetary income available to Nelson House and South Indian Lake residents. Non-monetary sources (e.g., country food) are also important sources of income and these are discussed separately in Section 3.2.2.2 (Resource Economy). The data allow useful comparisons between local average incomes and average incomes for the Province as a whole. All of the incomes presented are values before taxes. It is important to keep in mind that income earned on-reserve in Nelson House does not have the same associated tax burden as income earned off-reserve by most of the population in the Province, including residents of South Indian Lake.

Annual monetary incomes in Nelson House and South Indian Lake are generally lower than those seen provincially. [Table 3.7](#) below outlines average annual income for Nelson House and South Indian Lake as compared to the Province, for 1996 for the following types of income:

- Average income per person – personal income from all sources
- Employment income – income earned from employment
- Household income – total income from all sources for everyone living in the household
- Family income – total income from all sources for family living in the household.

¹⁵ The most recent year for which Census data were available. Data from the 2001 Census for these characteristics have not yet been released.

Table 3.7 Average Annual Income for the Reserve Community of Nelson House, South Indian Lake and the Province: 1996

Type of Income	Average Annual Income (\$) in 1996		
	Nelson House	South Indian Lake	Manitoba
Income Per Person	11,621	11,248	25,196
Employment Income	26,134	27,453	32,564
Household Income	31,742	32,816	43,404
Family Income	27,295	28,555	50,236

Source: Statistics Canada, 1996 Census of Canada.

Note: Incomes cited are before taxes.

Further detail on the distribution of each type of income within Nelson House and South Indian Lake are presented in the sections below. The data should be regarded with caution, however, because they represent income information collected from only 20 per cent of the population.

Average Income Per Person

Average income per person for males and females on an annual basis for Nelson House and South Indian Lake was estimated using data from the 1996 Census of Canada. The results are presented in [Table 3.8](#) below, with a comparison to average annual income in Manitoba for this year. The data indicate that both Nelson House and South Indian Lake residents had a lower annual income than an average Manitoba resident. For example, in 1996, an average Nelson House resident had an annual income of \$11,621, while an average Manitoban had an annual income of \$25,196.

Table 3.8 Average Annual Income of Residents in Nelson House, South Indian Lake and Manitoba: 1996

Personal Income \$ 1996	Nelson House (% of Residents)	South Indian Lake (% of Residents)	Manitoba (% of Residents)
Under \$10,000	60%	57%	29%
\$10,000 - \$19,999	22%	22%	26%
\$20,000 - \$29,999	10%	11%	17%
\$30,000 - \$39,999	5%	4%	12%
\$40,000 - \$49,999	3%	4%	7%
\$50,000 - \$59,999	1%	2%	4%
\$60,000 and over	0%	0%	5%
Average Personal Income:	\$11,621	\$11,248	\$22,667

Source: Statistics Canada, 1996 Census of Canada.

Notes:

- 1 - Only 20 per cent sample data.
- 2 - Based on entire population at Nelson House and South Indian Lake (i.e., includes some non-NCN members). Percentages may not equal 100 per cent due to rounding.
- 3 - Incomes cited are before taxes.

Employment Income

Census data on employment income indicate that, although employed residents in Nelson House and South Indian Lake have incomes higher than the community average, employment income in both communities is generally lower than the average for Manitoba. Table 3.9 below outlines average employment income for Nelson House, South Indian Lake and Manitoba based on Statistics Canada data for 1996.

Table 3.9 Average Annual Employment Income of Residents Living and Working Full-Time in Nelson House, South Indian and Manitoba: 1996

Statistics Canada 1996 ^{1,2}	Average Annual Employment Income (\$) ³		
	Overall	Male	Female
Nelson House	26,134	28,046	24,451
South Indian Lake	27,453	26,904	28,170
Manitoba	32,564	36,630	26,260

Source: Statistics Canada, 1996 Census of Canada.

Notes:

- 1 - Only 20 per cent sample data.
- 2 - Based on entire populations at Nelson House and South Indian Lake (i.e., includes some non-NCN members).
- 3 - Incomes cited are before taxes.

Household Income

Annual household income is defined as the amount of income earned by all persons living in the household. Table 3.10 below indicates the distribution of annual household income in Nelson House, South Indian Lake and Manitoba based on the 1996 Census of Canada. The table indicates that, in general, household incomes in Nelson House and South Indian Lake are much lower than those seen provincially. For example, in 1996, 23 per cent of households in Nelson House and 28 per cent of households in South Indian Lake had annual household incomes greater than \$40,000 in 1996. By comparison, in 1996, 45 per cent of households in the province had incomes over \$40,000.

Table 3.10 Distribution of Annual Household Income of Residents Living in Nelson House, South Indian Lake and the Province: 1991 and 1996

Household Income (\$/year) ¹	Percentage of Total Households, 1996		
	Nelson House	South Indian Lake	Manitoba
Under \$10,000	7%	6%	8%
\$10,000 to \$19,999	23%	22%	19%
\$20,000 to \$29,999	32%	28%	15%
\$30,000 to \$39,999	15%	16%	14%
\$40,000 and greater	23%	28%	45%
Average Household Income	\$31,742	\$32,816	\$43,404

Source: Statistics Canada, 1996 Census of Canada.

Notes:

- 1 - Incomes cited are before taxes.
- 2 - Only 20 per cent sample data.
- 3 - Based on entire population at Nelson House (i.e., includes some non-NCN members).
- 4 - Totals may not add to 100 per cent due to rounding.

Family Income

Family income is defined as the amount of income earned by a family, where family is defined as a married or common-law couple living together, with or without never-married sons or daughters; or a lone parent living with at least one never-married son or daughter. The 1996 Census of Canada is the only source available for determining family income.

Table 3.11 below indicates the distribution of family incomes among residents of Nelson House, South Indian Lake and Manitoba, based on the 1996 Census of Canada. As with household income, the results indicate that families in Nelson House and South Indian Lake generally have lower family incomes than those seen provincially.

Table 3.11 Annual Family Income of Residents in Nelson House, South Indian Lake and Manitoba: 1996

Family Income (\$)¹	Percentage of Total Families in Nelson House		
	Nelson House	South Indian Lake	Manitoba
Under \$10,000	13%	12%	5%
\$10,000 to \$19,999	33%	27%	11%
\$20,000 to \$29,999	26%	27%	15%
\$30,000 to \$39,999	11%	18%	14%
\$40,000 and greater	16%	15%	55%
Average Family Income	\$27,295	\$28,555	\$50,236

Source: Statistics Canada, 1996 Census of Canada.

Notes:

- 1 - Incomes cited are before taxes.
- 2 - Only 20 per cent sample data.
- 3 - Based on entire population at Nelson House (i.e., includes some non-NCN members).
- 4 - Totals may not add to 100 per cent due to rounding.

3.2.2.2 Resource Economy

Commercial and domestic resource harvesting in the Nelson House RMA were once mainstays of the local Nelson House economy, but their relative importance to the local economy, in terms of dollar value, has diminished in recent years. Despite this, a substantial number of NCN members continue to participate in traditional resource-based activities throughout the RMA that provide both cash and income-in-kind for many residents. These activities continue to be important for economic, social and cultural reasons and there are efforts to encourage greater participation in them.

Commercial Resource Economy

The commercial resource economy in the Nelson House RMA consists primarily of commercial fishing and commercial trapping (see EIS [Volume 7](#) on Resource Use). There are some additional activities, such as forestry, that contribute to the resource economy, but to a lesser degree (see [Volume 7](#): Resource Use, Section 5.0). As well, there is one outfitter from Thompson, Trapper Mike’s, who has an outfitting license that extends along both sides of the Burntwood River from the outlet of Wuskwatim Lake to Thompson (see [Volume 7](#): Resource Use, Section 6.0).

In general, there has been a decrease in the revenues generated by the local resource economy, particularly in terms of their relative importance to the overall NCN economy.

Commercial trapping activities have decreased dramatically in the past 10 to 15 years, and commercial fishing has also declined in the past 5 years.

[Table 3.12](#) below presents trapping data for the Nelson House **Registered Trapline (RTL)** District (same boundaries as the Nelson House RMA) from 1976/1977 to 2000/2001, including number of trappers, value of species trapped and average income per person. Based on the commercial trapping data available, between 1976 and 1990, the number of trappers reporting harvests from registered traplines in the Nelson House RTL District was approximately 129 people annually. After 1990, this dropped to approximately 53 trappers reporting annual harvests from the RMA. The number of traplines from which harvests were reported peaked in 1979/1980 at 47 (see [Volume 7: Resource Use, Section 4.0](#)).

The total gross value of annual fur harvests from the Nelson House RTL District since 1976 peaked in 1978/1979 at more than \$1 million (adjusted to 2001 values). Annual harvest value decreased to about \$190,000 by 1981/1982 and remained relatively stable during the 1980s, averaging \$188,000, before dropping again in 1989/1990 to about \$47,000. The average annual harvest value from 1989/1990 to 2000/2001 was about \$53,000, or 15 per cent of the average annual harvest value reported from the previous 14 years. The value of the harvest in 2000/2001 was about \$59,000. Declining fur prices during the 1980s are one of the key factors contributing to the reduction in harvests. Reduction in harvest numbers, decreased fur quality and problems with access to certain traplines have also contributed to the decrease in trapping activity and revenues (see [Volume 7: Resource Use, Section 4.0](#)).

Table 3.12 Summary of Traplines Reporting Harvest, Total Value of Commercial Harvest (2001 \$) and Total Value of Commercial Harvest per Trapline for the Nelson House RMA: 1976/1977 to 2000/2001

Year	Number of Traplines in the Nelson House RTL Reporting Harvest (Total = 65) ¹	Total Value of Commercial Harvest (2001 \$) ¹	Average Value of Commercial Harvest per Trapline (2001 \$) ²
1976 / 1977	41	313,489	7,646
1977 / 1978	47	930,216	19,792
1978 / 1979	46	1,091,548	23,729
1979 / 1980	48	591,647	12,326
1980 / 1981	44	320,501	7,284
1981 / 1982	44	189,613	4,309
1982 / 1983	41	106,587	2,600
1983 / 1984	42	117,184	2,790
1984 / 1985	42	237,039	5,644
1985 / 1986	35	170,323	4,866
1986 / 1987	40	274,242	6,856
1987 / 1988	42	176,060	4,192
1988 / 1989	40	109,490	2,737
1989 / 1990	29	48,367	1,668
1990 / 1991	N/A	N/A	N/A
1991 / 1992	25	31,599	1,264
1992 / 1993	21	23,568	1,122
1993 / 1994	30	79,310	2,644
1994 / 1995	N/A	N/A	N/A
1995 / 1996	N/A	N/A	N/A
1996 / 1997	29	53,346	1,840
1997 / 1998	37	60,148	1,626
1998 / 1999	26	75,198	2,892
1999 / 2000	28	50,699	1,811
2000 / 2001	32	59,461	1,858

Sources:

1 - Summary of trapping data by line for the NCN RMA from 1976/1977 to 2000/2001 (data not available for 1990/1991, 1994/1995 and 1995/1996). See [Volume 7: Resource Use, Section 4.0](#).

2 - Calculated by InterGroup Consultants Ltd., based on values provided [Volume 7: Resource Use, Section 4.0](#) (see Source 1).

Note:

1 - All values rounded to the nearest dollar.

Since 1976, commercial fishing has occurred on 29 of the 47 lakes in the Nelson House RMA, including Threepoint Lake and Wuskwatim Lake. [Table 3.13](#) below indicates that from 1976 to 2001, the average annual value of commercial fish production from the Nelson House RMA was about \$208,000 (adjusted to 2001 values). In general,

commercial fishing in the Nelson House RMA has declined in recent years (see [Volume 7: Resource Use, Section 3.0](#)).

On Wuskwatim Lake specifically, commercial fishing generally employs 4 to 10 individuals during the open-water season. Over the past 10 years, fishing on Wuskwatim Lake has been greatly reduced (only a small portion of the fishing quota is used) and in some years (1995, 1996 and 2001) there has been no commercial fishing (see [Volume 7: Resource Use, Section 3.2](#)). At present, the Freshwater Fish Marketing Corporation (FFMC) is not accepting walleye from Wuskwatim Lake because of high mercury levels; however, recent data suggest that mercury levels in walleye from Wuskwatim Lake would allow commercial marketing of walleye (see [Volume 7: Resource Use, Section 3.4](#)).

While monetary incomes received from commercial trapping and fishing activities are relatively limited, the value of the experience to the resource harvesters, their families and the community as a whole is much greater. These activities, like traditional resource use (which often occurs coincidentally with commercial harvesting), are an important mainstay of the economy and way of life of people who live at Nelson House.

Table 3.13 Present Value (2001 \$) of the Nelson House RMA Commercial Fishery: 1976 to 2001

Year	All Lakes in the Nelson House RMA	Wuskwatim Lake	
	Present Value (2001\$)	Present Value (2001\$)	Wuskwatim % of the Nelson House RMA Fishery
1976	121,289	54,396	45%
1977	148,148	28,941	19%
1978	186,299	-	0%
1979	129,439	-	0%
1980	229,407	42,103	18%
1981	159,747	32,785	21%
1982	131,689	13,262	10%
1983	115,903	34,527	30%
1984	203,157	20,953	10%
1985	166,648	40,033	24%
1986	182,745	21,887	12%
1987	256,709	22,671	9%
1988	266,302	42,403	16%
1989	212,768	19,004	9%
1990	169,325	5,532	3%
1991	288,210	5,890	2%
1992	316,259	37,636	12%
1993	176,533	18,017	10%
1994	210,889	2,627	1%
1995	257,079	-	0%
1996	295,856	-	0%
1997	248,536	4,764	2%
1998	308,895	30,014	10%
1999	258,640	20,771	8%
2000	197,733	2,191	1%
2001	164,026	-	0%

Sources: Value Distribution of the Nelson House RMA commercial fishery from 1976 to 2001. See [Volume 7: Resource Use](#), Section 3.0.

Note:

1 - All values rounded to the nearest dollar.

Traditional Resource Use

Traditional pursuits, like hunting and fishing, play an important role in contributing to the non-monetary income of NCN members living in Nelson House. The availability and use of natural resources has, to some extent, limited local reliance on store-bought items,

most notably food. Table 3.14 below presents data available through the Country Foods Program (average of 10 years of data) and the Harvest Calendar (collected from August 2001 to May 2002) and indicates that domestically-harvested foods are a significant contributor to local diets.

Table 3.14 Estimated Number of Meals Obtained from Domestic Harvest on an Annual Basis by NCN Members

Meat	Weight (kg) ¹	Meals Per Year ^{1,2}	Per Capita Meals Per Year ³
Fish ⁴	9,276	46,381	21
Waterfowl ⁵	1,606	8,032	4
Grouse	104	520	0.2
Moose	23,833	119,164	53
Caribou	1,035	5,173	2
Other Big Game ⁶	3,828	19,143	8
Small Game ⁷	1,151	5,753	3
Trap ⁸	2,157	10,791	5
Total	42,990	214,957	95

Sources: Number of meals of meat obtained from domestic harvest on an annual basis by NCN members. Harvest data were obtained from the NCN Harvest Calendar (August - May, 2001) and Country Foods Program (average of 1990-2000 data). See [Volume 7: Resources, Section 2.0](#).

Notes:

- 1 - Combined data from Country Foods Program (average of 10 years of data) and the Harvest Calendar (collected from August 2001 to May 2002).
- 2 - One meal of meat is defined as 0.2 kilogram of meat, and all weights are presented as kilograms.
- 3 - Calculated based on the 2000 NCN on-reserve population of 2,258 individuals. Assumes that all members, regardless of age, eat meals of equivalent size.
- 4 - Fish include: Cisco, Maria, Perch, Pike, Suckers, Walleye, Whitefish, Trout and Roe.
- 5 - Waterfowl include: Mallards, Black Ducks, Ducks, and Geese.
- 6 - Other Big Game include: Elk and Deer.
- 7 - Small game include: Rabbit and Squirrel
- 8 - Trapped species include: Beaver, Muskrat and Lynx.

Other bush products also contribute to income-in-kind for the local economy. These include collection of medicinal plant materials, collection and use of furs/hides for crafts (sold commercially and for personal use) and collection of firewood for personal use.

Like commercial resource harvesting in the RMA, the value of the harvested products and the process of obtaining them goes well beyond their nominal value. Even though the number of individuals and families who undertake traditional harvesting has declined in recent decades, the knowledge and use of the land is important to NCN as a community and is central to their culture. Efforts are underway to encourage these types of activities, particularly among youth in the community. (For example, taking youth onto the land has

been an element of some programming at both the Wellness Centre and the school.) (Interviews with Social Service Providers, 2002; Nelson House Education Authority, personal communication, 2002).

3.2.2.3 Nelson House Business Economy

Businesses are playing a growing role in the local economy. Some businesses are long-standing (e.g., Nelson House Forest Industries, established in the 1970s) and others have been developed recently. Expansion of the business sector in Nelson House (and elsewhere) has been an element of NCN's strategic planning to improve the local economy. This section provides a profile of existing businesses.

The Nelson House business economy consists of on-reserve businesses in three general categories:

- Business owned and operated by the Nelson House Development Corporation
- Businesses wholly or partially owned by NCN
- Private businesses.

Businesses in each of these categories are discussed below.

Nelson House Development Corporation Businesses

Current business investments held by the Nelson House Development Corporation include:

Meetah Building Supplies and General Contractors: a five-year old lumber supply and construction company located on-reserve. In addition to supplying lumber, Meetah also manufactures doors and kitchen cabinets and supplies furnaces, appliances and furniture (primarily beds) for residents of Nelson House. In the last three years, Meetah has also started to provide general contracting services. Since then, they have constructed about one-quarter of homes built in the community. On an annual basis, Meetah's sales average between \$1 million and \$2 million. (Nelson House Development Corporation, personal communication, 2002).

Family Foods (formerly Lucky Dollar Foods): an on-reserve grocery store originally operated by the First Nation, but transferred to the Development Corporation about three years ago. Family Foods has experience supplying food for construction and firefighting crews. For the last three years, they have provided food for an average of

30 to 40 firefighting crews with five men in each crew. They also provided all of the food for those working on the Mile 20 pilot road for the Project, and all of the food for those who completed the Mile 17 road centreline for the Project. The company is interested in doing more of this work in the future (Family Foods, personal communication, 2002).

Notigi Portage Outfitters and Restaurant: located at Notigi and including a restaurant, gas station, three rental cabins and outfitting services for moose and bear hunting, and fishing.

Otohowin Gas: a gas bar and convenience store located on-reserve with approximately \$1 million in sales each year.

In the future, the Development Corporation will be taking over responsibility for the NCN Communications Corporation, a business currently owned and operated by NCN. They are also looking to build a complex in Nelson House that houses a restaurant, travel agency and, eventually, the Family Foods store. Other future plans include the possibility of an on-reserve bank, an insurance company and an eco-tourism initiative (Nelson House Development Corporation, personal communication, 2002).

Other Businesses Wholly or Partially Owned by NCN

Businesses wholly or partially owned by NCN include:

Nelson House Forest Industries (NHFI) (wholly-owned): a 25-year old company providing construction services, road maintenance, and general contracting for projects in Nelson House and the surrounding area. The types of work undertaken by NHFI include sewer and water projects on-reserve, gravel hauling, bulldozer and other heavy equipment rentals, certified vehicle inspections of trucks and Band-owned vehicles (e.g., water trucks, semis and buses), soil reclamation (in 2001, they completed a \$500,000 soil reclamation project at the Medicine Lodge in Nelson House), and logging (amounts vary depending on the contracts NHFI is working on). Currently, NHFI employs 26 full-time employees and four seasonal employees and has annual revenues ranging from \$3 to \$7 million (NHFI, personal communication, 2002).

NCN Communications Corporation (wholly-owned): responsible for providing communication services within the community, including cable service and

maintenance, managing the local public access channel, and developing and delivering radio programming on the local radio station.

NCN Gaming Commission (wholly-owned): provides a facility with Video Lottery Terminals (VLTs) for adults living on-reserve. Profits from the Gaming Commission are used to support community projects.

Mystery Lake Hotel (wholly-owned): a Thompson-based hotel purchased by NCN in 1998. The hotel has 69 rooms, a dining room and lounge and the Trapper's Inn bar.

Footprint Engineering (partially-owned): a partnership between NCN and Tim Nykoluk, Professional Engineer. The firm, created and incorporated in August 1997, provides engineering consulting services to NCN, as well as other northern communities, primarily in the areas of project management, engineering and design, surveying and inspection.

Privately-owned Businesses

There are also a number of privately-owned businesses in Nelson House. These include:

The Northern Store: a combination food and general merchandise store owned and operated by the North West Company. Services include grocery, retail, hardware, gas and miscellaneous products. In addition, the Northern Store operates the Nelson House Post Office and a Kentucky Fried Chicken/Quick Stop Convenience Store.

Local Contractors: include a number of small, independent contractors working in Nelson House who primarily provide carpentry, plumbing and electrical services to the NCN Housing Authority and Meetah Building Supplies. Contractors identified during interviews in Nelson House included three construction companies (Jerry McDonald Construction, the largest independent contractor in Nelson House, Ted's Construction, and F & F Construction); two carpenters, three electricians, and three plumbers. (Nelson House Development Corporation, personal communication, 2002).

Otapanask Repairs: a locally-operated repair shop specializing in car and small engine repairs.

Bear Paw Security Services: owned by three NCN members, with a main office in Nelson House and a sub-office in Winnipeg. The company provides on-site security

services on a contract basis for events and organizations in Nelson House and Winnipeg, as well as other locations in Manitoba. Bear Paw has trained, on-call staff in both Nelson House and Winnipeg (Bear Paw Security Services, personal communication, 2002).

Catering: about five individuals organize and provide catering services in Nelson House. These include the operator of the arena canteen, a local member who owns and operates a lunch truck and three individuals who organize catering services out of their homes. All of these operations have on-call workers to help prepare and serve food.

Confectionaries: about five small convenience stores operated by local residents either out of their homes or in facilities in their yards. These stores typically sell soda pop, potato chips, candy and cigarettes.

Local Taxis: four local taxis, each operating a single vehicle, provide services within the community, as well as to and from Thompson.

Cree-Man Consulting: a locally owned and operated mineral exploration company that has been in business for about two years. Currently, the company provides services to the First Nation only, but it is interested in expanding to undertake work for other organizations (Cree-Man Consulting, personal communication, 2002).

3.2.3 Effects and Mitigation

Local Region economic effects differ between the Project's construction and operations phases. Each is presented separately below.

3.2.3.1 During Construction

During construction, economic effects in the Local Region will be short term and stem primarily from employment and business opportunities associated with the Project. The local economy will also be affected, to some extent, by training opportunities associated with the Project and changes to the local environment that affect commercial and domestic resource harvesting in the Nelson House RMA.

Employment Effects

Employment effects in the Local Region stem primarily from the Project's construction phase. However, smaller, additional employment effects have also been experienced throughout the Project's planning phase, which began in 1997 with the establishment of the NCN Future Development Team. The Future Development Team engages in discussions with Manitoba Hydro, conducts research on an array of topics, guides the community involvement process and consults with an external environmental assessment team about the potential effects of proposed future hydroelectric developments, including the proposed Project (see Section 4.2.2.6).

Project Planning

As part of the Future Development process, the Future Development Team established a fully-staffed Future Development Office in Nelson House. In addition to two co-managers, the Nelson House Future Development Office employs ten local Community Consultants, including three Elders Consultants who are fluent in Cree, a Community Liaison and an Office Manager. The Future Development Office also employs a Secretary and an Administrative Assistant responsible for accounting. A smaller Future Development office has also been set up in South Indian Lake and employs two full-time, local Community Consultants.

Community Consultants are responsible for informing NCN members about any discussions between NCN and Manitoba Hydro and getting feedback from the community. They do this by going door-to-door with information, hosting open houses, producing and distributing newsletters and conducting surveys. Along with members of the Future Development Team, Community Consultants also participate on various Committees responsible for assessing and planning for proposed future hydroelectric developments.

In addition to full-time employees, the Future Development Team has also hired a number of temporary consultants to conduct NCN Opinion Surveys in the following communities:

- Nelson House – employed 20 temporary consultants in May, June and July of 2000.
- South Indian Lake – employed four temporary consultants in July and August of 2001.

- Winnipeg – employed three temporary consultants in September, 2001.

Experience and training received as a result of employment through the Future Development Office has built the capacity of these members to take on similar work in other fields. Many of the skills learned (e.g. public participation techniques; assessing and planning for the proposed Project) may also be transferable to jobs with other employers in the Local Region.

Project Construction

The following presents available employment opportunities and possible employment effects in the Local Region as a result of construction of the Project. Effects presented represent a best possible estimate and actual effects may vary. Employment effects vary according to stage of construction and, as such, these stages are presented separately in the analysis. (See 3.1.1.2 for Project Construction Employment Requirements.)

The ability of Local Region residents to access and then retain Project construction job opportunities depends on a number of factors, including the following (which are discussed in greater detail under 3.1.1.1 Approach and Methodology):

- Prevalence of negotiated contracts with NCN businesses, which primarily affects Local Region employment estimates during Stage 1 (Years 1-2) of construction. Negotiated contracts may allow NCN contractors to directly hire qualified northern NCN members. For the purposes of this analysis, it is assumed that NCN contractors will receive various infrastructure construction contracts during Stage 1, including access road construction, clearing and grubbing, various camp-related contracts, catering, and access control and security, as well as specific Stage 2 (Years 3-6) work packages, including catering, certain materials transportation services, and various camp-related contracts.
- Hiring preference arrangements, which primarily affect Local Region employment during Stage 2 of construction. For the purposes of this analysis, it is assumed that first preference hiring will occur for Aboriginal residents of communities in the Project Region defined by the Burntwood River and Nelson River areas (see 3.1.1.2 for details).

- Pre-Project training initiatives (see below), which will determine the ability of residents in the Local Region to meet qualifications to be hired for available construction positions.
- On-the-job training and retention initiatives, which will affect the ability of residents in the Local Region to be retained on Project construction after being hired, and to enhance skills and qualifications while working on the Project.

Available employment opportunities and estimated employment effects in the Local Region that could potentially be expected from the construction of the Project are summarized below in [Table 3.15](#), which shows estimated **peak positions**, and in [Table 3.16](#), which shows estimated peak person-years of employment. The estimated peak positions and person-years of employment shown reflect assumed negotiated contracts with NCN, the assumed first employment preference, and anticipated pre-Project training initiatives. Estimated peak positions and person-years of employment are presented based on the following trade and experience groups:

- Trainees and positions with zero to 24 months experience – at present (i.e., without Wuskwatim pre-Project training), the majority of Local Region residents have combined training and experience that falls into this category (see Section 3.2.2.1).
- Construction Support and Non-Designated Trades with 3 to 4 years and greater than 4 years experience – currently (i.e., without Wuskwatim pre-Project training and/or previous work experience), very few residents in the Local Region have training and experience in this category.
- Designated Trades Positions – in the Local Region, there are less than 20 residents who currently (i.e., without Wuskwatim pre-Project training and/or previous work experience) have the necessary training and experience requirements to qualify for journeyman and apprentice positions during Project construction.

Table 3.15 Estimated Maximum Peak Positions Employment in the Local Region during Project Construction

Trade & Experience Group	Estimated Maximum Peak Positions Employment ¹	
	Total Number of Positions Available ²	Estimated Positions Held by Local Region Aboriginal Residents ³
<i>Stage 1 (Years 1-2) Infrastructure Development⁴</i>		
Trainees and Positions with 0 – 24 months experience	130	78-90 ⁶
Construction Support & Non-designated Trades, 3 – 4 and >4 yrs. Experience	10	0
Designated Trades Positions	17	3 ⁷
<i>Stage 2 (Years 3-6) Major Works Construction Installation⁵</i>		
Trainees and Positions with 0 – 24 months experience	265	64-83 ⁶
Construction Support & Non-designated Trades, 3 – 4 and >4 yrs. Experience	124	2
Designated Trades Positions	385	14-28 ⁷

Notes:

- 1 - This information represents an estimate only, based on current regulations, Project plans as of 2002, and past experience with similar projects. Contractors will determine specific job requirements when the Project is being built. Actual employment requirements will vary from the estimate presented above.
- 2 - The number of positions refers to the maximum during the stated construction stage. These positions will not be concurrent. Actual number of positions at a given time will be less than the estimated maximum. The positions identified are those potentially filled by job orders. Excludes Manitoba Hydro staff and contractor supervisory and management positions.
- 3 - The Local Region includes Aboriginal residents of Nelson House and the Northern Affairs communities of Nelson House and South Indian Lake.
- 4 - During the Stage 1, it is expected that the majority of this work will be performed by NCN contractors engaged in negotiated contracts with Manitoba Hydro. Article 2.9 of the existing BNA enables northern Aboriginal contractors with negotiated contracts to directly hire northern Aboriginal residents without having to go through the job order process to which the northern employment preference applies. The BNA is currently being renegotiated.
- 5 - Catering and security work are anticipated to be negotiated contracts with NCN contractor(s) during the Major Construction in Y3-Y6. Assuming provisions of Article 2.9 of the existing BNA, these contractors would be able to directly hire northern Aboriginal residents, e.g., NCN members. This would result in some positions that would otherwise be accessible to other northern Aboriginal residents in the employment preference region going to NCN members.
- 6 - The low end of the range reflects existing capacity of NCN members and about 50 per cent of NCN pre-Project training targets. The upper end of the range reflects employment effects that would occur if NCN pre-Project training targets are fully achieved.
- 7 - NCN apprentices will compete with other pre-project training participants, particularly pre-project training participants on the Gull/Keeyask Project, and this may constrain achievement at the upper end of the range.

Table 3.16 Estimated Maximum Person-years Employment in the Local Region during Project Construction

Trade & Experience Group	Estimated Person-years of Employment ¹	
	Total Number of Person-years Available ²	Estimated Person-years Secured by Local Region Aboriginal Residents ³
Stage 1 (Years 1-2) Infrastructure Development⁴		
Trainees and Positions requiring 0 – 24 months experience	92.0	55.2-63.7 ⁶
Construction Support & Non-designated Trades, 3 – 4 and >4 yrs. Experience	8.3	0
Designated Trades Positions	12.8	2.3 ⁷
Total	113.2	57.5-66.0
Stage 2 (Years 3-6) Major Works Construction Installation⁵		
Trainees and Positions with 0 – 24 months experience	437.9	105.8-137.2
Construction Support & Non-designated Trades, 3 – 4 and >4 yrs. Experience	127.5	2.1
Designated Trades Positions	430.5	15.7-31.3 ⁷
Total	995.9	123.5-170.5

Notes:

- 1 - This information represents an estimate only, based on current regulations, Project plans as of 2002, and past experience with similar projects. Contractors will determine specific job requirements when the Project is being built. Actual employment requirements will vary from the estimate presented above.
- 2 - The number of person-years refers to the total for the stated construction stage. The person-years of employment are for positions potentially filled by job orders. Excludes Manitoba Hydro staff and contractor supervisory and management positions.
- 3 - The Local Region includes Aboriginal residents of Nelson House and the Northern Affairs communities of Nelson House and South Indian Lake.
- 4 - During Stage 1, it is expected that the majority of this work will be performed by NCN contractors engaged in negotiated contracts with Manitoba Hydro. Article 2.9 of the existing BNA enables northern Aboriginal contractors with negotiated contracts to directly hire northern Aboriginal residents without having to go through the job order process to which the northern employment preference applies. The BNA is currently being renegotiated.
- 5 - Catering and security work are anticipated to be negotiated contracts with NCN contractor(s) during the Major Construction in Y3-Y6. Assuming provisions of Article 2.9 of the existing BNA, these contractors would be able to directly hire northern Aboriginal residents, e.g., NCN members. This would result in some positions that would otherwise be accessible to other northern Aboriginal residents in the employment preference region going to NCN members.
- 6 - The low end of the range reflects existing capacity of NCN members and about 50 per cent of NCN pre-project training targets. The upper end of the range reflects employment effects that would occur if NCN pre-project training targets are fully achieved.
- 7 - NCN apprentices will compete with other pre-project training participants, particularly pre-project training participants on the Gull/Keeyask Project, and this may constrain achievement at the upper end of the range.

Based on Table 3.16 above, it is estimated that Aboriginal residents in the Local Region (virtually all of whom are considered to be NCN members) could secure between 52 and 59 per cent of peak positions (about 81 to 93 local peak positions) during the first stage of construction. This equates to between 51 and 58 per cent of the maximum person-years of employment (or 57.5 to 66.0 person-years) available during the first stage of construction (see Table 3.16). Almost all this Local Region employment would require

less than 24 months of experience (including trainees). The ranges presented indicate uncertain effects from pre-Project training activities; the overall estimates reflect assumed negotiated contracts with NCN and are not affected by the hiring preference assumptions.

During Stage 1 of construction, anticipated negotiated contracts with NCN businesses (expected to constitute the majority of work during Stage 1) offer the main opportunity for qualified NCN members to secure employment. Under Article 2.9 of the existing Burntwood Nelson Agreement (BNA), northern Aboriginal contractors with negotiated contracts are able to directly hire northern Aboriginal residents without having to go through the job order process to which the northern employment preference applies. Assuming Article 2.9 provisions, it is anticipated that NCN contractors engaged in negotiated contracts would use this opportunity to directly hire as many qualified employees as possible from among the pool of qualified NCN members.

During the second stage of construction, it is anticipated that Aboriginal residents in the Local Region could secure between 10 and 15 per cent of the peak positions (or 80 to 113 peak positions). In terms of person-years of employment, this equates to between 12 and 17 per cent of the maximum person-years of employment (123.5 to 170.5 person-years) available during the second stage of construction. It is assumed that many of these Local Region employees will also have been employed and gained experience during Stage 1. (As for the Stage 1 employment estimates, the ranges presented reflect uncertainty about the effect of pre-Project training activities in the Local Region.)

Although anticipated negotiated contracts will continue to offer employment opportunities during Stage 2 for qualified NCN members, the amount of work available through such contracts will be much smaller (may affect 30 to 40 positions) than in Stage 1. As a result, employment preference policy and pre-Project training activities will more heavily influence the extent to which Aboriginal residents in the Local Region participate in the Project during this stage of construction.

In particular, the assumed employment preference policy will primarily affect the number of positions held by Aboriginal residents of the Local Region that are in trainee positions in the non-designated and construction support trades and those that require zero to 24 months of combined training and experience. Overall, there are more Aboriginal workers available in the first preference region than are required for these positions, which constitute only about one-third of available peak positions during Stage 2. As such, it is expected that available positions in these areas will likely be distributed to northern

Aboriginals resident in communities throughout the region of first preference – i.e., both inside and outside the Local Region.

Conversely, for skilled positions in the workforce (which dominate the required workforce during Stage 2), there is a shortage of qualified northern Aboriginal workers in the designated trades and experienced non-designated trades (i.e., 3 to 4 years of combined training and work experience). This means that employment in these positions, for Aboriginal residents in the Local Region or other northern residents, is expected to be only minimally influenced by employment preference. Instead, the supply of qualified candidates, and not the number of positions required for the workforce, is the limiting factor for northern Aboriginal employment in the designated trades and experienced non-designated trades. This suggests that for these skilled positions, pre-Project training, in combination with work experience, will be key factors affecting potential Project construction employment among Aboriginal residents in the Local Region.¹⁶ Local Region residents who receive some form of pre-Project training and secure employment during Stage 1 of the Project will be strongly situated to take on these types of positions, particularly in the non-designated trades and construction support occupations.

Experience from construction of the Limestone Generating Station Project suggests that the extent of sustained Local Region employment will depend on measures to retain workers at the construction site. During the Limestone Project, between 1985 and 1989, 28 per cent of northern Aboriginal employees remained on the job for less than 30 days (Mazur 1990). Retention strategies will be necessary throughout the Project, during pre-Project training (see below) and through both stages of construction employment. During Project construction, retention strategies will be particularly important during Stage 2 when most Local Region workers will primarily be employed by contractors other than Nelson House-based firms (i.e., they are not likely to have a personal relationship with their employers and, in some cases, their co-workers). A workplace retention strategy will be developed jointly by a committee of NCN and Manitoba Hydro representatives prior to the start of construction. The strategy will include measures to address issues and concerns at the work site (e.g., on-site Elder counsellors).

It is expected that most of the Local Region employment during Project construction will go to NCN members who currently work on a seasonal, on-call or part-time basis or are unemployed. Full-time employment is rare in the Local Region, so those currently

¹⁶ A possible exception is the limited number of apprenticeship positions specifically targeted by Aboriginal communities (e.g., carpenters, electricians), particularly in light of the extensive pre-Project training funding concurrently being provided to Gull/Keeyask potential partner communities.

Project schedules or the quality of delivered goods and services. If a contract cannot be concluded with a qualifying NCN business by direct negotiation, Manitoba Hydro will use restricted tendering or open competitive tendering to award the contract.

Possible negotiated contracts are still under discussion, but could include various infrastructure contracts during Stage 1 (e.g., access road construction, clearing and grubbing, various camp-related contracts, catering, and access control and security) and specific Stage 2 work packages (e.g., catering, certain materials transportation services, and various camp-related contracts). The economic value of these contracts for NCN businesses is not currently known.

In addition to negotiated contracts, some NCN members may establish various entrepreneurial opportunities associated with the Project (established and operated according to sound business case analysis). Areas identified as having potential for local business opportunities include, among others:

- Convenience store/snack bar at the construction camp
- Taxi service
- Pizza/chicken takeout-delivery
- Hair care services
- Video rentals
- Arts and crafts sales.

It is not feasible to quantify the number or type of business opportunities that may be pursued by entrepreneurs in the Local Region, nor is it feasible to estimate the economic potential of these opportunities.

Training Effects

In the Local Region, training effects as a result of Project construction stem from both pre-Project and on-the-job training opportunities.

NCN has taken on responsibility for the design, development and delivery of pre-Project training for residents in Nelson House and members in South Indian Lake. The scope and extent of this training is currently being finalized; however, NCN is in the process of developing a multi-year training plan based on the *NCN Proposal – ATEC and Related Training Activity*, a proposal submitted to Manitoba Hydro and the governments of Manitoba and Canada to secure funding for proposed pre-Project training activities.

Wherever possible, the intent is to deliver this training in Nelson House at the proposed **Atoskiwin Training and Employment Centre (A-TEC)**. Currently, temporary classroom facilities (eventually to become A-TEC residences) are being constructed and are expected to be ready in spring, 2003.

NCN training plan components are expected to include:

- Literacy and educational upgrading (considered to be necessary for 90 per cent of NCN trainees)
- Lifeskills training (to prepare all trainees for jobs at the Project)
- Technical trades training for designated trades, non-designated trades and construction support occupations, and
- Work experience for trainees in designated trades (apprentices), non-designated trades and construction support occupations.

The mix of training components appropriate for each trainee will be determined on an individual basis. For example, not all trainees will require literacy and education upgrading. The one exception is lifeskills training, which all trainees will be required to take before starting work at the Project construction site.

Table 3.17 below outlines the occupational categories for which NCN plans to provide pre-Project training, the targeted number of trainees in each year from 2002-2003 to 2006-2007 and the estimated retention rate (i.e., trainees who complete their chosen training program). Based on this training proposal, NCN is working to develop and deliver training programs for approximately 194 members in a mix of designated trades, non-designated trades and construction support occupations. Of these, NCN anticipates that 172 trainees (or 89 per cent) will complete the training program in their chosen field by 2006-2007, or the second year of Stage 2 construction. In the case of designated trades, the 28 trainees projected to be near completion at the end of 2006-2007 are expected by NCN to have completed at least their first two levels of apprenticeship training (i.e., will be 3rd or 4th level apprentices, or journeypersons).¹⁷

NCN's estimated attrition rate for trainees of 11 per cent is very ambitious and actual rates of attrition may be higher. This is a recognized concern and NCN is taking a

¹⁷ Designated trades positions require completion of a certain number of levels, typically four, before journeyperson status can be obtained. Each level includes a combination of on-the-job skill development and technical, classroom-based training.

number of positive steps to support local residents in completing their chosen training program. These include:

- Wherever possible, providing training in the community.
- Providing a training allowance to trainees, wherever possible, during the course of their training program.
- Free child care services for all trainees.
- Retention support services available to trainees for all aspects of training.

The targets and numbers in [Table 3.17](#) will be updated annually to reflect actual attrition experience and other factors. Funding arrangements take into consideration the prospect that actual attrition rates may be higher than assumed in [Table 3.17](#).

There is also concern that residents will be “let down” if they complete training and are unable to secure employment in their chosen fields or on the Project. Similarly, this has the potential to discourage new trainees from entering programs. NCN has been careful to consider and design training programs in areas and in quantities that are relevant to construction of the Project and have the potential to provide local employment over the long term.

Table 3.17 Estimated Number of NCN Trainees by Occupational Category: 2002-2003 to 2007-2008

Occupational Category	Total Number Trainees	Trainees by Year						Total trainees completed	Estimated Attrition Rate
		2002-03	2003-04	2004-05	2005-06	2006-07	2007-08		
<i>Non-designated Trades</i>									
Labourers	40	15	15	5	5		40	0%	
Equipment Operators	30	24	24	24	partial year		24	20%	
Teamsters	20	16	16	16	partial year		16	20%	
<i>Construction Support</i>									
Catering	24	12	12	partial year			24	0%	
Clerical	40	10	10	10	10	On-the-job	40	0%	
<i>Designated Trades</i>									
TOTAL	40								
Year 4		upgrade	16	16	16	16	16	partial year	30%
Year 3		upgrade	8	8	8	8	8	partial year	
Year 2		4	4	partial year			4		
TOTALS	194	81	105	79	39	16	172	11%	

Source: NCN Proposal – ATEC and Related Training Activity, 2002.

Note: This table will be updated annually to reflect actual experience and other factors, as required.

In addition to pre-Project training activities, Project specifications for the general civil and other major tendered contracts are expected to include provisions requiring the successful contractor to provide on-the-job training in the principal occupations they employ where there is opportunity for extended work (e.g., jobs of at least 2 months or more in duration). Based on the existing BNA, it is assumed that:

- For non-designated trades, such as equipment operators and teamsters, a maximum of one in five positions will be expected to be on-the-job training positions. The actual number of trainees employed at any time will be affected by several factors. The trainee positions that are available will be designed so candidates who have taken relevant pre-Project training can fill them. Previous construction project experience will not be required for these trainee positions.
- For most designated trades, such as carpenters and electricians, major contractors will generally be expected to hire one apprentice for every four journeypersons for extended work contracts, although this will vary depending on the contract, the trade in question and the apprentices' skill levels. It is assumed that apprentices would be required to have attained 3rd or 4th level status to qualify for Project construction positions. This typically requires 25 months or more of combined training and work experience.

Bidders for the major contracts will be required to submit the details of their on-the-job training program in their tender submissions.

It is estimated that during Stage 1, approximately all of the available trainee positions will go to Aboriginal residents in the Local Region. During Stage 2 of construction, Aboriginal residents in the Local Region will compete for trainee positions with other Aboriginal residents living in the region assumed for first hiring preference. For this reason, Local Region residents are anticipated to receive approximately 33 per cent (16 positions) of the total 49 trainee positions that are available, and likely to be of interest to Aboriginal residents in the Northern Region, during Stage 2.

The above pre-Project and on-the-job training activities will improve the capacity and skill of Local Region residents to participate in the northern economy and will be of benefit for local development. The magnitude of this effect will vary, depending on the number of people who successfully complete their chosen training program or remain in on-the-job training positions.

employed full-time are unlikely to give up these positions for seasonal construction work at the Project construction site. Local Region employment at the Project construction site has the potential to reduce unemployment in the Local Region by a maximum of about 10 per cent during Stage 1 (assuming peak employment estimate of 93 positions, all jobs being taken by unemployed residents and a projected active labour force of 960 people) and 12 per cent during Stage 2 (assuming peak employment estimate of 128 positions, all jobs being taken by unemployed residents and a projected active labour force of 1,100 people). For a Region with chronically high levels of unemployment, this would be quite substantial.

It is also likely that, for Local Region employees who are currently unemployed or working on a sporadic basis, Project construction employment will lead to an increase in income (as a result of both higher wages and more working hours). This, in turn, has the ability to effect quality of life and social well-being (see Section 5.2.2.4 on Social Well-being), generate spin-off effects for local businesses and those in Thompson (see Section 3.3.3.1) and increase federal government revenues (through tax revenues and reduced social assistance – see Section 3.5.3.1). Local Region employment will also assist in building longer-term capacity for residents to participate in the northern wage economy through enhanced work experience and training.

Project construction employment will have some “boom-bust” effect on the economy and labour force of this Region since the relatively enhanced employment will tend to end when construction is completed. Steps are being taken, or are under consideration, by NCN to reduce this effect. These steps include targeting of skill areas that will be of value during and after the construction project in other work settings. In addition, NCN is pursuing economic development opportunities that would coincide with the latter years of the construction phase. In addition, in the event that other hydro projects (e.g., Gull/Keeyask) begin to be built during or immediately following Project construction, Aboriginal residents of the Local Region will have renewed opportunities for construction employment. Nevertheless, some degree of “boom and bust” effect is likely to be felt.

Business Effects

Business participation by NCN in construction of the Project is anticipated to occur mainly through a range of negotiated contracts during all construction years with qualifying NCN businesses. In general, direct negotiation with qualifying NCN businesses will be pursued where costs are reasonable and there is no adverse effect on

In the short term, trades training received in conjunction with the Project will serve to qualify NCN members for Project construction employment. The training and experience obtained will be particularly important during Stage 2 of construction, when there is a high demand for skilled workers (i.e., one to two years or more training and experience). It is also possible, that, over the long-term, the skills and experience developed may help Local Region residents secure jobs during the construction of other northern hydroelectric developments that may begin construction within the next five years (e.g., the Gull/Keeyask Project).

Trades training received as a result of the Project can also be utilized in other areas (e.g., forestry and mining). Current projections suggest that there will be trades shortages in northern Manitoba in the future. The training and experience received as a result of the Project will provide some Local Region residents with the skills needed to pursue work in these areas throughout the North. Many of the skills learned may also be transferable to jobs with other employers in the Local Region.

Resource Economy Effects

Greater detail on effects on resource use in the Local Region is provided in [Volume 7: Sections 2 \(Domestic Harvest\), 3 \(Commercial Fishing\) and 4 \(Commercial Trapping\)](#). The following is a summary of the details provided in these sections.

Resource economies in the Nelson House Resource Management Area (RMA), both commercial and domestic, have the potential to be affected during construction of the Project through:

- Improved access to the Wuskwatim area as a result of the Project's access road.
- Disturbances and habitat loss as a result of noise and construction-related activity in the Wuskwatim area.
- An influx of workers to the Wuskwatim area.
- Changes to lifestyle among residents of the Local Region as a result of participating in the Project construction workforce.

Commercial Resource Economy

In terms of the commercial resource economy, it is anticipated that during Project construction commercial trappers and fishers will have access to the Wuskwatim area along the Project access road. Access along the new road will be controlled during

construction via a staffed gate at PR 391. Under an Access Management Plan, the **Limited Partnership** will decide who may use the road during this phase and it is expected that local resource harvesters will be among those who will be permitted to make restricted use of the road. This new, albeit restricted, access is anticipated to increase both trapping and fishing activity in this area.

Additionally, incomes earned through Project employment will provide the financial resources to purchase harvesting equipment; most notably means of transportation (e.g., snowmobiles).

Commercial Trapping

In terms of trapping, the road to the Wuskwatim site will provide direct access into registered traplines (RTLs) that have not previously had road access. As noted, it is expected that, under the proposed Access Management Plan, commercial trappers will be allowed restricted use of the access road by special arrangement during construction. Trappers in these RTLs (RTL numbers 1, 2, 4, 9 and 47) have indicated that the access road will facilitate increased harvests because of increased safety and more cost-effective transportation. Since 1976, average production from these RTLs has been \$98,151, compared to \$163,954 for road accessible RTLs in the Nelson House RMA. This suggests that increased access during construction will lead to increased productivity from the RTLs directly affected by the access road.

Construction activity and the associated increase in the number of people and amount of traffic, and habitat disruption associated with borrow pits, generating station construction, etc. are expected to cause a redistribution of animals in the area, but are not expected to have a measurable effect on the overall abundance of animals in the area. The overall effect on commercial trapping of animal redistribution is expected to be small and short-term.

The increase in the wage economy in the Local Region during Project construction is also expected to lead to a small, short-term increase in commercial trapping in the Nelson House RMA. Resource harvesting activity has been shown to decrease in relation to an increasing community income; however, it is also dependent on affordable transportation. Project incomes will provide the financial resources to purchase resource harvesting equipment (e.g., snowmobiles) and will subsidize recent poor returns from trapping. As well, a large number of Project construction workers from the Local Region will be laid off during the winter months when most commercial trapping takes place.

Commercial Fishing

It is anticipated that commercial fishers will also be granted restricted use of the access road during construction under the final terms of the proposed Access Management Plan. The access road to the Project site will provide a cost effective mode of transportation for delivering commercial catches from Wuskwatim Lake to Nelson House. Truck transport could result in a cost saving of approximately \$1.20/kg of fish compared to air transport (assuming that road transportation costs are \$0.10/kg and air transportation costs are \$1.30/kg). Based on the average harvest from 1988-1999 (6534 kg) this will result in a net annual saving of \$7,841.

The cost savings associated with road transportation could re-establish the fishery as an economically viable operation. Assuming a net return of 60 per cent, the value of the fishery with road access is in the range of \$5,000-\$24,000 (2001\$) annually, depending on the types and quantities of fish harvested (see [Volume 7: Resource Use, Section 3.3](#) for detailed calculations and assumptions). Road access will make it more cost effective to harvest fish of lesser value than walleye (e.g., tullibee).¹⁸ For this reason, average annual total harvests of species other than walleye may increase compared to recent historical values.

Road access into Wuskwatim Lake may also make commercial fishing on Opegano Lake, which currently has a quota of 1,000 kilograms of walleye and whitefish, more valuable. Although the Project access road will not provide direct road access, it will increase the feasibility of future vehicular (e.g., snowmobile) access to Opegano Lake.¹⁹

The majority of construction jobs potentially available to Nelson House residents will occur during existing commercial fishing seasons (spring and fall) and this may cause a short term decrease in the number of individuals interested in commercial fishing, especially if the potential for earnings from commercial fishing is low. Layoffs during winter could increase interest in a winter commercial fishery.

During construction, it is anticipated that domestic and recreational fishers from outside the workforce will not be allowed to use the access road. However, the workforce at Wuskwatim has the potential to increase domestic and recreational fishing pressure on

¹⁸ Although walleye from Wuskwatim Lake are not currently being purchased by FPMC because of concern about high mercury levels, recent data suggest that mercury levels in walleye from Wuskwatim Lake would allow commercial marketing of walleye.

¹⁹ The net annual value of a road accessible Opegano Lake fishery would be in the neighbourhood of \$1,971 (2001\$) (see [Volume 7: Resource Use, Section 3.3](#) for detailed calculations and assumptions, assuming a net return of 60 per cent). No estimate has been made of possible net annual return with only snowmobile access.

the lake and elsewhere within the RMA. During peak construction there will be approximately 540 workers, including many with Treaty fishing rights, that could potentially fish at Wuskwatim Lake. The potential harvest by these workers could be substantial over a short period of time and, in conjunction with increased commercial catches, could contribute to a reduction in the fish population in the lake. Management measures to address this issue are being discussed by Manitoba Hydro and NCN, in conjunction with the Nelson House Resource Management Board.

There is also possibility that increased traffic around Wuskwatim Lake will change the environmental setting for fishermen working on the lake and may increase vandalism or damage to commercial fishing gear. However, existing fishermen did not express any concern with regard to the effect of the Project on existing cabins.

Domestic Resource Economy

As with the commercial resource economy, the domestic resource economy is expected to see a small, short-term increase in activity in the Nelson House RMA during Project construction. The main source of effect will be the participation of Local Region residents in Project construction.

Increased employment and increased income as a result of Project construction are expected to have offsetting effects on domestic harvesting. Local residents that gain employment during construction will have less time to use cabins and pursue traditional resource gathering, hunting and fishing activities, and the need for traditional harvests to supplement diets may be reduced. However, increased incomes will also increase the ability of local residents to purchase resource harvesting equipment such as trucks, boats, snowmobiles, ATVs, guns and nets, and to construct cabins, which would facilitate resource harvesting activity.

The majority of Project construction will take place during the summer months, with a large proportion of the workforce, including those from the Local Region, laid off during winter months. Consequently, domestic resource harvesting activities are expected to decrease during the summer months of Project construction and increase during winter months when construction activity is low.

Increased traffic and dust on PR 391 may have a negative effect on cabin use and berry picking areas, many of which are adjacent to the road.

Access into the Wuskwatim area is expected to be limited during Project construction to workers and a few others by special arrangement (e.g., trappers). As such, the new access road is not expected to have an effect on domestic harvesting during this time period. Further, disturbances from construction activity and habitat loss resulting from borrow pit excavation and camp construction will be occurring in areas where little resource harvesting has occurred in the past. These disturbances and habitat loss are expected to result in the temporary relocation of animals, but are not expected to have a measurable effect on animal populations in the RMA over the long term.

There is also possibility that the influx of workers into the Wuskwatim area could have a negative effect on harvests of fish, waterfowl and large game animals (moose and caribou) in the immediate area. If focused on Wuskwatim Lake, harvests of fish by non-NCN workers could, in conjunction with commercial and domestic harvest by NCN members, have a negative effect on fish abundance. This could negatively affect commercial fishermen from Nelson House who would gain access to Wuskwatim Lake during Project construction and domestic fishermen who would gain access during Project operation. As noted above, management measures to address this issue are being discussed by Manitoba Hydro and NCN, in conjunction with the Nelson House Resource Management Board. Effects on NCN waterfowl harvesters by migrant hunting would be small and short-term, and primarily related to competition for space rather than harvest. In terms of large game, current restrictions on gun possession and on access will likely limit effects on moose and caribou harvests. Potential effects from the influx of workers can be mitigated through access management, education (environmental stewardship), and resource harvesting regulations and enforcement.

3.2.3.2 During Operations

Local Region economic effects experienced during the operations phase of the Project are expected to result mainly from potential ownership investment in the Project by NCN. To a much more limited extent, effects may also occur as a result of employment and business opportunities available during operations, as well as biophysical changes that may affect local resource harvesting.

NCN Ownership Participation

Assuming that NCN invests in the Project, significant Project effects on the Local Region economy will be felt during the Project's operations phase (beginning in 2009) when NCN begins to realize the stream of revenue stemming from this ownership investment. The revenue that NCN receives would be based on the percentage of the partnership that they choose to acquire (potentially up to 33 per cent). Annual revenue for NCN would be

based on the financial performance of the Generation Project; they would share in the risks associated with the Generation Project as well as the benefits.

The source of NCN funding for its cash investment (to be provided at the end of the construction period) has not yet been identified and could create effects on near-term community funding for other community priorities. Dividends paid to NCN in any year will vary depending on the level of NCN cash investment, the project's profitability and the final terms agreed upon in the PDA. The levels of investment return to NCN anticipated during the first decade or more of operations are in the order of several million dollars annually. These amounts are similar to the annual revenue that NCN now obtains from its community-based trusts. No special mitigation or impact management measures are considered to be required. In the long term (i.e., after 15 to 25 years of operation), annual dividends to NCN could provide ongoing new annual long-term sustainable community incomes well in excess of the current community-based trusts experience (i.e., tens of millions of dollars). Mitigation measures to deal with the effects of such new community incomes include planning (related to spending these levels of income) being started early in the operations phase in order to identify options, priorities and specific plans.

Employment and Business Effects

The Agreement-in-Principle between NCN and Manitoba Hydro (signed in September, 2001) calls for discussion between Manitoba Hydro and NCN of business and employment opportunities for NCN during the operations phase of the Project ([see Appendix 5](#)). These opportunities would be of much smaller magnitude than during the construction phase. The operation of the generating station would be highly automated, which would result in a very small number of employees being required (ranging normally from two to six depending on the inspection, maintenance and monitoring requirements from time to time). Maintenance contracts for the Project buildings and infrastructure could provide another source of direct small-scale, long-term employment opportunities. Maintenance contracts may also provide opportunity for further Local Region business participation.

Resource Economy Effects

Greater detail on effects on resource use in the Local Region is provided in [Volume 7: Sections 2 \(Domestic Harvest\), 3 \(Commercial Fishing\) and 4 \(Commercial Trapping\)](#). The following is a summary of the details provided in these sections.

Resource economies in the Local Region, both commercial and domestic, will be modestly affected by changes to harvesting activity brought on primarily by increased access into the Nelson House Resource Management Area (RMA) and changes to the water level regime upstream and downstream of the station.

Commercial Resource Economy

In terms of the commercial resource economy, it is anticipated that new access for commercial trappers and fishers, begun during the construction phase, will likely continue during the operations phase as part of the Access Management Plan (to be developed). As such, trapping and fishing in the Wuskwatim area are both predicted to increase during Project operation.

Commercial Trapping

Restricted access provided during the construction phase to traplines along the access road and the associated effects (i.e., commercial trapping production from RTLs 1, 2, 4, 9 and 47 (compared to the period before the construction phase)) are expected to remain during the operations phase. Based on average harvests from road accessible RTLs, harvests could increase by as much as 65 per cent. Depending on the final terms of the Access Management Plan for the Project's operations phase, it is possible new access across the generating station may be permitted. This would provide safe passage across the Burntwood River during all seasons and would facilitate access to traplines south of the river and Wuskwatim Lake. With increased access, safety and cost savings for travel, harvests from traplines in this area could increase.

Changes to shoreline habitat as a result of the water regime upstream of the generating station are expected to have a small positive effect on muskrat and beaver abundance and a negligible effect on other furbearers. Commercial trappers did have some concern that the trail currently used for travel will become flooded and pose a danger for winter travel.

Commercial Fishing

Access provided into the Wuskwatim Lake area during the construction phase of the Project and the associated effects, including benefits to the commercial fishery, will remain during Project operation. Annual harvests are expected to exceed the average from the past fifteen years.

Stabilization of water levels on Wuskwatim Lake is expected to benefit walleye and northern pike and this could benefit the commercial fishery.²⁰ (Walleye generate higher revenue than other species.) Conversely, sedimentation resulting from an increased rate of erosion on Wuskwatim Lake is expected to have a small negative effect on lake whitefish production.

Subject to the final terms of the Access Management Plan, domestic fishermen from Nelson House and, perhaps, other recreational fishermen may be provided access to the lake. Domestic and recreational fishermen would compete for the same resources as the commercial fishery. After construction of the Project, it is estimated that domestic fishing would not exceed more than 1,621 kilograms of fish annually, or 25 per cent of the commercial catch from Wuskwatim Lake between 1988 and 1999. Current recreational fishing effort in the Nelson House RMA is relatively low and new catches from Wuskwatim Lake are not expected to pose a threat to the commercial fishery over the short term. However, increases in recreational fishing in the long term could be of concern to the commercial fishery.

Domestic Resource Economy

As with the commercial resource economy, effects on the domestic resource economy are primarily related to possible increased access into the Nelson House RMA. Domestic harvesting is expected to increase in the Wuskwatim area, however, the extent of this increase will depend on the final terms of the Access Management Plan (to be developed by the Limited Partnership before the operations phase begins).

It is expected that with the access road, there will likely be an increase in the use of the two existing cabins on Wuskwatim Lake and possibly an increased demand by NCN members to build cabins on the Lake. (Much of the resource harvesting activity in the RMA is currently based out of cabins, most of which are road accessible.)

Where access is increased, domestic hunting, fishing, trapping and gathering are also anticipated to increase. Much of this (moose, caribou and waterfowl hunting and berry-picking) will be a redistribution of resource harvesting activities from other areas within and outside the RMA.

²⁰ Although walleye from Wuskwatim Lake are not currently being purchased by FPMC because of concern about high mercury levels, recent data suggest that mercury levels in walleye from Wuskwatim Lake would allow commercial marketing. A small increase in the mercury concentration in walleye is expected as a result of the Project, but mean concentrations are expected to remain below the levels of concern for the commercial fishery.

In the case of trapping, there is expected to be an increase in domestic harvests in the four traplines affected by the access road. In addition, the terms of the Access Management Plan for the Project's operations phase could permit travel over the generating station, providing safe access to traplines south of the Burntwood River. This has the potential to also increase domestic harvest in this area, however, a lack of existing trails south of the River mean that any increase is expected to be only marginal.

Fishing on Wuskwatim Lake (particularly for whitefish) is also expected to increase, beyond that which is redistributed from elsewhere. The increase in fishing effort is expected to be moderated to some degree by the distance of the lake from Nelson House. The annual domestic harvest after access is provided to Wuskwatim Lake is not expected to exceed the harvest from Threepoint Lake estimated for 2001/2002 of 1,605 fish, or 1,621 kilograms of fish annually. A boat launch is also planned for the Lake, which will further facilitate access by domestic fishermen.

Finally, the gathering of medicinal plants in the Wuskwatim Lake area is expected to increase during operation, particularly for plants that are unique to or more abundant in the area.

3.2.4 Cumulative Effects

There are several Projects proposed either within or near to the Local Region, which could have economic effects (primarily employment opportunities) that overlap in the Local Region with those of the Project.²¹

Pending Project approvals, the Wuskwatim Transmission Project will start construction concurrent with the construction phase for the Project. Additionally, based on current planning, there is a possibility that the Gull/Keeyask Generating Station (potential construction start of 2007), the Conawapa Project (earliest possible construction start of 2006) and/or the Notigi Project (potential construction start after 2009) could start to be developed near the end of the Project construction phase and into the Project operation phase.

The Wuskwatim Transmission Project will offer limited, additional seasonal construction employment and business opportunities in the Local Region and is set to start

²¹ Section 2.2.7 provides full details on the approach and methodology for assessing cumulative effects and the future projects and activities included as part of the cumulative effects assessment for this SEIA.

construction concurrent with the construction phase for the Project (i.e., in late 2003). Local Region opportunities associated with this project are primarily related to construction of transmission lines, including:

- Development of a 230 kilovolt (kV) transmission line from Thompson to the Wuskwatim site. This line will initially be used for construction power for the Project. Clearing of the right-of-way for the line is planned to occur during winter 2002/03 (after license approval), with line construction occurring the following winter from December, 2004 to March, 2005.
- Development of two 230 kilovolt (kV) transmission lines from the Wuskwatim site to Herblet Lake Station in Snow Lake. Clearing and construction of these lines is likely to occur during Stage 2 of Project construction and will also be done in the winter months.

Clearing and construction associated with the Wuskwatim Transmission Project will provide only a limited number of seasonal job opportunities – current estimates are 25 to 30 winter season jobs in any given year. Nonetheless, it will provide additional employment opportunities for NCN members, particularly during the winter months when most Project construction workers will be laid off.

Business opportunities associated with the Wuskwatim Transmission Project are also limited (e.g., line clearing, surveying, material transportation). The extent of NCN business participation is still being discussed internally at NCN and with Manitoba Hydro.

Development of the Gull/Keeyask Generating Station and/or the Conawapa Project, which have estimated peak workforce requirements of 1,200 to 1,500 and 1,800 workers, respectively, have the potential to generate a substantial amount of additional construction employment for Local Region residents, particularly those with Wuskwatim construction work experience.

The timing of construction for the Gull/Keeyask Generating Station (currently protected to start 6 to 7 years of construction in 2007) and, possibly, the Conawapa Project (earliest possible construction start of 2006, for a first power in-service date of 2015) partially overlaps with construction of the Project and partially occurs after Project construction is complete. These projects would provide additional job opportunities for Local Region Project construction workers that make use of the experience and skills gained while

working on the Project. They would also extend the opportunities available within proximity of the Local Region to complete the necessary work requirements for trades apprenticeships (i.e., Local Region apprentices may be able to complete work experience requirements within the North).

As Project construction nears completion, additional job opportunities associated with the Gull/Keeyask and Conawapa projects could help to ease the anticipated “boom-bust” effect likely to be felt from the Project in the Local Region. Employment opportunities associated with these projects could also provide employment for Local Region residents who were unsuccessful or unable to obtain Project employment.

If developed, the Notigi Project, which at the earliest would start construction after 2009, would also provide additional employment opportunities for Local Region residents, beyond the completion of Project construction. As with the potential Gull/Keeyask and Conawapa projects, this could also help to ease the anticipated “boom-bust” effect as Project construction comes to an end.

In terms of the resource economy, there is a possibility that Tolko may begin harvesting in the Nelson House RMA in the 2009-2014 time period (i.e., following the construction phase of the Project). This could include possible construction of a winter road and timber harvesting in areas to the south and east of Threepoint Lake, between PTH 6 and the Burntwood River and including Partridge Crop Hill. (There is a high probability that the Partridge Crop Hill area will not be harvested – Partridge Crop Hill has spiritual importance for NCN and NCN has indicated that it would object to forestry operations in this area. Also, there is currently a legal challenge to Tolko’s license. As of today, the license is still valid, so harvesting plans have been included here ([see Volume 10](#).) Tolko harvesting activity in this area may overlap with increased resource harvesting activity south of the Burntwood River during Project operation, assuming access across the dam is permitted. Additionally, a winter road would provide further access into this area, and could create additional access management concerns.

3.2.5 Residual Effects and Significance

This section presents the estimated residual effects of the Project to economy in the Local Region. Residual effects incorporate, to the extent possible, cumulative effects noted in Section 3.2.4 and consider the effect of impact management measures (both mitigation and enhancement measures) that are planned. Based on criteria outlined in Section 2.2.8,

the significance of these effects for the community as a whole is assessed, along with the general direction of change (positive, negative or elements of both).

Table 3.18 presents a summary of residual effects and significance of effects (including direction of change – positive or negative) by phase. As reviewed in Section 2.2.8, the EIS examines under “residual effects” both positive and negative (or adverse) effects. The focus of concern identified in the EIS Guidelines for significance evaluation, however, is **adverse effects**. No significant adverse effects are assessed with respect to the Project’s socio-economic effects on the economy of the Local Region.

Table 3.18 Residual Effects and Significance of Effects on the Economy of the Local Region

Project Phase	Residual Effects	Significance ¹
Construction	Increased Employment	Moderate (+) (Significant)
	Increased Incomes	Moderate (+) (Significant)
	Increased Business Opportunities	Moderate (+) (Significant)
	Increased Capacity through Project Training	Moderate (+) (Significant)
	New Access for Resource Harvesting	Minor (+ and –) (Not Significant)
Operations	Revenue from Ownership Investment	Major (+) (Significant)
	Increased Employment	Negligible (+) (Insignificant)
	Increased Business Opportunities	Negligible (+) (Insignificant)
	New Access for Resource Harvesting	Minor (+ and –) (Not Significant)

Note:

1 - See Section 2.2.8 for definitions adopted for this assessment.

During the Project's construction phase, the Local Region is expected to experience moderate positive economic effects in all of the topics areas considered – employment, business, training and resource economy. Although short term, these effects are major in magnitude and affect the whole community. In the areas of employment and training, where the largest number of Local Region residents is likely to be affected, the magnitude of positive residual effects will depend on the outcome of proposed mitigation measures (especially workplace retention strategies to be developed by NCN and Manitoba Hydro and training retention strategies to be developed by NCN) and is likely to be significant.

During the Project's operations phase, NCN ownership investment in the Project is expected to generate major (significant) positive economic effects in the Local Region, resulting in effects that are long-term and major in magnitude and affect the whole NCN community. Effects on Local Region employment, business and training are expected to be positive, minor (not significant), and effects on the local resource economy are expected to be positive and minor (not significant) during this phase.

It is anticipated that Aboriginal residents in the Local Region (virtually all of whom are considered to be NCN members) could secure between 52 and 59 per cent of peak positions (about 81 to 93 local peak positions, which translates to 57.5 to 66.0 person-years) during the first stage of construction, and between 10 and 15 per cent of peak positions (about 80 to 113 peak positions, which translates to 123.5 to 170.5 person-years) during the second stage of construction.

Most of the Local Region employment during Project construction is expected to go to NCN members who currently work on a seasonal, on-call or part-time basis or are unemployed. For these residents, Project construction employment will likely lead to an increase in personal income.

Project construction employment will have some “boom-bust” effect on the economy and labour force of this Region. Steps are being taken, or are under consideration, to reduce this effect. In the event that other hydro projects (e.g., Gull/Keeyask, Conawapa, Notigi) start to be built during or immediately following Project construction, Aboriginal residents of the Local Region will have additional opportunities for construction employment. Nevertheless, some degree of “boom and bust” effect is likely to be felt.

During the operations phase, only a very small number of employees would be required (normally from two to six employees, including three or four technicians and two utility

workers). Maintenance contracts for the Project buildings and infrastructure could also provide a source of direct small-scale, long-term employment opportunities.

NCN businesses are expected to participate in construction of the Project through a range of negotiated contracts during all construction years. Possible negotiated contracts are still under discussion, but could include various infrastructure contracts during Stage 1 (e.g., access road construction, clearing and grubbing, various camp-related contracts, catering, and access control and security) and specific Stage 2 work packages (e.g., catering, certain materials transportation services, and various camp-related contracts). Some NCN members may also establish various entrepreneurial opportunities associated with the Project (e.g., convenience store/snack bar at the construction camp, taxi service). It is not practical to estimate the economic potential of these opportunities.

During Project operations, maintenance contracts for the Project buildings and infrastructure may also provide opportunity for further Local Region business participation.

Training effects in the Local Region related to construction stem from both pre-Project and on-the-job training opportunities. The scope and extent of pre-Project training is currently being finalized. NCN is working to develop and deliver training programs for approximately 194 members in a mix of designated trades, non-designated trades and construction support occupations. Of these, NCN anticipates that 172 trainees (or 89 per cent) will complete the training program in their chosen field by 2006-2007, or the second year of Stage 2 construction. In the case of designated trades, the 28 trainees projected to be near completion at the end of 2006-2007 are expected by NCN to have completed at least their first two levels of apprenticeship training (i.e., will be 3rd or 4th level apprentices, or journeypersons).

Project specifications for the general civil and other major tendered contracts are also expected to include provisions requiring the successful contractor to provide on-the-job training in the principal occupations they employ where there is opportunity for extended work (e.g., jobs of at least 2 months or more in duration.) Based on the existing BNA, it is assumed that for non-designated trades, a maximum of one in five positions will be expected to be on-the-job training positions. It is assumed that for most designated trades, major contractors will generally be expected to hire one apprentice for every four journeypersons for extended work contracts. (Apprentices will likely be required to have attained 3rd or 4th level status to qualify for Project construction positions.) The actual number of trainees employed at any time will be affected by several factors.

In terms of the commercial resource economy, it is anticipated that during Project construction commercial trappers and fishermen will have access into the Wuskwatim area along the Project access road. Access along the new road will be controlled during construction via a staffed gate at PR 391. Under an Access Management Plan (Section 4.4), the Limited Partnership will decide who may use the road during this phase and it is expected that local resource harvesters will be among those who will be permitted to make restricted use of the road. The cost savings associated with road access will increase revenues from the Wuskwatim Lake commercial fishery and, in turn, production levels. This effect is expected to continue during Project operation, with annual harvest expected to exceed the average from the past fifteen years.

Improved access is also expected to increase commercial trapping production from RTLs 1, 2, 4, 9 and 47. This effect will start during Project construction and continue into Project operation. Based on average harvests from road accessible RTLs, harvests could increase by as much as 65 per cent. Others RTLs south of the Burntwood River may also become more accessible (assuming access over the dam is permitted) and this may result in increased production in these areas.

Domestic harvesting is also expected to increase in the Wuskwatim area; however, the extent of this increase will depend on the final terms of the Access Management Plan. It is likely that a proportion of the domestic resource harvesting activity in the Nelson House RMA will be re-directed to the Wuskwatim area because of improved access. Increased utilization and harvests for domestic purposes may compete with commercial use in the area. Although safe access to the south side of the Burntwood River over the generation station could be provided under the final terms of the operations phase Access Management Plan, a lack of existing trails in the area would result in only a marginal increase in use by domestic harvesters.

Assuming that NCN invests in the Project, significant Project effects on the Local Region economy will be felt during the Project's operations phase (beginning in 2009) when NCN begins to realize the stream of revenue stemming from this ownership investment. The revenue that NCN receives would be based on the percentage of the partnership that they choose to acquire (potentially up to 33 per cent). Annual revenue for NCN would be based on the financial performance of the Generation Project; they would share in the risks associated with the Generation Project as well as the benefits.

The source of NCN funding for its cash investment (to be provided at the end of the construction period) has not yet been identified and could create effects on near-term community funding for other community priorities. Dividends paid to NCN in any year will vary depending on the level of NCN cash investment, the project's profitability and the final terms agreed upon in the PDA. The levels of investment return to NCN anticipated during the first decade or more of operations are in the order of several million dollars annually. These amounts are similar to the annual revenue that NCN now obtains from its community-based trusts. No special mitigation or impact management measures are considered to be required. In the long term (i.e., after 15 to 25 years of operation), annual dividends to NCN could provide ongoing new annual long-term sustainable community incomes well in excess of the current community-based trusts experience (i.e., tens of millions of dollars). Mitigation measures to deal with the effects of such new community incomes include planning (related to spending these levels of income) being started early in the operations phase in order to identify options, priorities and specific plans.

3.2.6 Monitoring and Follow-up

Monitoring and follow-up measures in the Local Region will be put in place regarding training (pre-Project and on-the-job), Project employment and business participation. Approaches in each of these areas are outlined below. Monitoring and follow-up measures for the resource harvesting economy, including access management measures, are outlined in [Volume 7: Resource Use](#), Sections 2 (Domestic Resource Use), 3 (Commercial Fishing) and 4 (Commercial Trapping).

In terms of Local Region employment, monitoring will be undertaken to measure and evaluate levels of Local Region Project employment (especially during the construction phase) and turnover rates among Local Region Project employees. The results of monitoring will help determine whether impact management measures, beyond those specified as part of the employee retention strategy, are required.

An Employment Advisory Committee will be established and made up of representatives from Manitoba Hydro, NCN, AET, the Hydro Projects Management Association and the Allied Hydro Council. The Committee will receive and consider employment monitoring results for the Local Region. This same committee will be responsible for monitoring and following up on Aboriginal employment for the Project as a whole.

In terms of Local Region training, Project training activities (both pre-Project and on-the-job) will be evaluated on a regular basis to determine their success and provide information to those parties managing these activities. Relevant pre-project training results will be gathered and examined by NCN, Manitoba Hydro and potentially AET. The Employment Advisory Committee, noted above, will examine and respond to monitoring information regarding on-the-job training at the construction site.

Business participation by businesses in the Local Region (through negotiated contracts or other means) will be monitored by NCN and Manitoba Hydro.

3.3 PROJECT REGION

3.3.1 Sources of Effects

In the Project Region, sources contributing to economic effects as a result of the Project primarily occur during Project construction and include:

- Employment opportunities associated with the Project. This will primarily be a source of economic effects during the second stage of construction when the number of available positions is at its peak.
- Business participation in the Project. This will primarily be a source of effects in the community of Thompson and will likely come as a result of direct expenditures on services and goods by Project contractors and indirect expenditures by Project workers who visit Thompson during their days/evenings off.
- Pre-Project and on-the-job training opportunities associated with the Project. In the Project Region, pre-Project training opportunities will likely be coordinated through Manitoba Advanced Education and Training (AET). On-the-job training opportunities will be provided by Project contractors for principal occupations where there is opportunity for extended work (e.g., jobs of at least two months of more in duration).

Resource harvesting and ownership participation effects, which are confined primarily to the Local Region, are addressed in Section 3.2.

3.3.2 Existing Environment

This section provides an economic profile of the Project Region. It includes communities that lie both inside and outside the Local Region. For the most part, the analysis excludes further detailed review of the reserve community of Nelson House and the Northern Affairs communities of Nelson House and South Indian Lake.

In the Project Region, the City of Thompson is the next closest community to the proposed Wuskwatim Generating Station site, after Nelson House. The size and close proximity of Thompson mean that the City will play a service centre role during the construction phase, for construction workers during their leisure time, for some contractors (e.g., bulk fuel), and for the transportation of most supplies and equipment and some workers. For this reason, the economy of the City of Thompson is highlighted separately from the balance of the Project Region. (The LGD of Mystery Lake is included in the discussion about the City. The LGD, which surrounds the City of Thompson, includes mining, recreation and other activities, but has almost no population/labour force).

Elsewhere in the Project Region, the degree of economic effect is likely to be limited to employment opportunities for local workers. The profile of other communities in the Project Region focuses primarily on labour force characteristics. Further details on the economy of the Project Region are found in [Appendix 1](#), Section 3.13 (Thompson) and Section 3.2 (Other communities outside the Local Region).

3.3.2.1 Thompson and the LGD of Mystery Lake

The economy of the City of Thompson has diversified from its origins as a single-industry mining community into a regional government and service centre serving much of northern Manitoba and the eastern Arctic. This shift has resulted, in part, from the decline of INCO's economic role in the community over time, as a result of fluctuating international nickel prices, developments in mining technology and the availability of mineral reserves. With the exception of only a few years, employment levels at INCO have declined over the last 20 years. The shift away from a central focus on the mining industry has resulted in a changing population structure within the community and a changing business and economic profile.

Labour Force Characteristics

Employment, Participation and Unemployment

Table 3.19 below highlights the labour force characteristics of the City of Thompson for the 1996 Census year.²² The data show that both participation and **employment rates** among residents of Thompson are higher than the provincial average. This has been the case historically, as a result of employment opportunities in the mining sector and the fact that people typically left the community when there was no work available. Participation rates for Thompson deviated from the provincial norm to the greatest extent in the 1960s, the early days of INCO's activity in the community. Rates moved closer to the provincial average over time, reflecting the shift away from a single-industry mining centre towards a more diversified economy (Taunton 1978).

The data also show that, in 1996, participation and employment rates were lower among Aboriginal residents of Thompson than among the total population, and also were lower than the provincial average. It should be noted, though, that participation and employment rates for the Aboriginal population in Thompson were much higher than in Nelson House and South Indian Lake, likely due to the greater availability of opportunities in Thompson.

Between the 1986 and 1996 Census years, both the potential and active labour force in Thompson increased. The Aboriginal portion of the potential and active labour force grew as well over this same period, but at a faster rate than the overall population: the Aboriginal portion of the potential labour force grew from 9.2 per cent in 1986 to 22.1 per cent in 1996, while the Aboriginal portion of the active labour force grew from 6.9 per cent in 1986 to 17.7 per cent in 1996. These trends are likely due both to the generally higher growth rates within Manitoba's Aboriginal population and to the migration of some Aboriginal workers to communities like Thompson that have greater economic opportunities. Similar trends are expected into the future, with the projected labour force for Thompson anticipated to be between 10,239 and 14,042 individuals by 2011. Of these, between 7,876 and 10,801 individuals are projected to be part of Thompson's active labour force.

²² The 2001 Census data have recently become available, and are being reviewed to confirm that a complete and consistent data set can be provided for all communities and regions under review in the SEIA. If feasible, the 2001 data may be added to Volume 8 at a later time.

Table 3.19 Employment, Participation and Unemployment in Thompson's Total and Aboriginal Populations and in Manitoba, 1996

Characteristics ^{1,2}	Total Thompson Population	Total Thompson Aboriginal Population ³	Manitoba
The potential labour force ⁴	10,170	2,245	855,880
The active labour force ⁵	8,025	1,420	567,825
Employed ⁶	7,385	1,145	523,210
Unemployed ⁷	640	275	44,615
Persons not in the labour force	2,145	830	288,055
Participation rate	78.9%	63.3%	66.3%
Employment rate	92.0%	80.6%	92.1%
Unemployment rate	8.0%	19.4%	7.9%

Source: Statistics Canada 1996, Census of Canada. (Aboriginal data obtained from the Department of Indian and Northern Affairs on December 18, 2001.)

Notes:

- 1 - Data incomplete: 20 per cent sample data.
- 2 - Totals may not add due to rounding.
- 3 - The definition of an Aboriginal person in the 1991 Census included Registered Indians, those individuals reporting Aboriginal ancestry and those individuals holding Band Membership. The definition of an Aboriginal individual for the 1996 Census included Registered Indians, those reporting Aboriginal ancestry, those identifying as Aboriginal and all Band Members. In this table, data from the 1996 Census of Canada have not been adjusted to align with the earlier Canadian Census definition of an Aboriginal person. For this reason, caution should be used when comparing data from the different years.
- 4 - Statistics Canada defines the potential labour force as all persons in a given population, excluding institutional residents, age 15 years and over.
- 5 - The active labour force includes all persons 15 years of age and over, excluding institutional residents, who, during the week (Sunday to Saturday) prior to Census Day were either employed or unemployed.
- 6 - The "employed" include all persons who "worked for pay or in self-employment" in the paid labour force in the week prior to enumeration. This includes all persons working for wages or salaries, all self-employed persons (with or without paid help) working in their own business, farm or professional practice, and all persons working without pay on a family farm or business during the reference week. The "employed" also include those persons absent from their job or business for the entire week because of vacation, illness, a labour dispute at their place of work or other reasons.
- 7 - The classification of unemployed does not account for the underemployed, or those individuals working part time but desiring a full time position. As well, the classification does not include discouraged workers: those individuals who wish to work but have ceased looking because they do not believe they will find a job. Unemployment numbers may be understated for these reasons.

Data from the 1996 Census of Canada show that workers in the Thompson labour force work in a variety of economic sectors. The three leading occupational sectors at that time included mining (20 per cent of those employed), the retail trade sector (11 per cent of those employed) and health and social services (11 per cent of those employed).

More recent data obtained from the North Central Development Corporation (2001), suggest that, although INCO remains the largest single employer in the community, the provincial government is playing an almost equal role as an employer. As can be seen in

Table 3.20 below, the Mystery Lake School Division, the Burntwood Regional Health Authority and the aviation industry also employed a substantial proportion of Thompson’s active labour force in 2001.

Table 3.20 Thompson's Major Employers, the Industry or Service They Provide, and the Number of Employees as of January 8, 1999

Employer	Services	Number of Employees
INCO	Mining, smelting, refining	1,400
Provincial Government	Government services	1,200
Burntwood Regional Health Authority	Health Service	420
Mystery Lake School Division	School services	400
Calm Air	Aircraft/travel services	300
Skyward Aviation	Aircraft/travel services	205
Wal-Mart	Retail	150
City of Thompson	Municipal services	120
Manitoba Hydro	Hydro	112
Safeway	Retail	105
Manitoba Telecom Services	Telephone services	80

Source: North Central Development Corporation, 2001.

Notes:

- 1 - The data in the table above were collected through a North Central Development telephone survey conducted in December, 2001. The employment counts should be read as rounded approximations.

Education

Table 3.21 highlights the education levels of all Thompson residents, as well as Thompson’s Aboriginal population, 15 years of age and over, for the Census years 1991 and 1996. The data suggest that, in general, levels of education appear to be increasing in both Thompson’s total and Aboriginal populations. However, Thompson’s Aboriginal population does appear to have lower levels of education than the City’s population as a whole. For example, in 1996, nine per cent of Thompson residents reported that their highest level of education was less than grade 9. In Thompson’s Aboriginal population, 20 per cent of the population reported less than grade 9 as their highest level of education.

Table 3.21 Highest Level of Schooling for Thompson’s Total and Aboriginal Populations
Ages 15 Years and Over: 1991 and 1996

Level of Education	Percentage of total residents ages 15 and over			
	Total Thompson Population		Thompson Aboriginal Population ¹	
	1991 Statistics Canada ^{2,3} (Total = 10,620)	1996 Statistics Canada ^{2,3} (Total = 10,170)	1991 Statistics Canada ^{2,3} (Total = 2,450)	1996 Statistics Canada ^{2,3} (Total = 1,740)
Less than Grade 9	9	9	19	17
Grades 9 to 12:	45	42	46	44
- Without Secondary School	33	30	40	36
Graduation Certificate				
- With Secondary School	12	12	22	8
Graduation Certificate				
Trades Certification or Diploma	4	5	N/A	N/A
Other Non-University Education Only	23	25	22	26
- Without Certificate Or Diploma	6	6	6	7
- With Certificate Or Diploma	17	19	16	19
University:	19	20	13	14
- Without Degree	11	10	11	10
- With Bachelor's Degree or Higher	8	10	2	4

Sources:

- 1 - Statistics Canada, 1991 Census of Canada. (Aboriginal data received from the Department of Indian and Northern Affairs, December 18, 2001.)
- 2 - Statistics Canada, 1996 Census of Canada. (Aboriginal data received from the Department of Indian and Northern Affairs, December 18, 2001.)

Notes:

- 1 - The definition of an Aboriginal person in the 1991 Census included Registered Indians, those individuals reporting Aboriginal ancestry and those individuals holding Band Membership. The definition of an Aboriginal individual for the 1996 Census included Registered Indians, those reporting Aboriginal ancestry, those identifying as Aboriginal and all Band Members. In this table, data from the 1996 Census of Canada have not been adjusted to align with the earlier Canadian Census definition of an Aboriginal person. For this reason, caution should be used when comparing data from the different years.
- 2 - Incomplete data: 20 per cent sample data.
- 3 - Totals may not add due to rounding.

Income Levels and Sources

Table 3.22 below highlights income levels for the total and Aboriginal population of Thompson at the time of the 1996 Census of Canada. As can be seen in the table, the proportion of the population falling within the lower income brackets (below \$29,000) tends to be substantially higher among Aboriginal residents in Thompson than the total population for all income categories.

Table 3.22 Personal, Family and Household Income Levels for the Total and Aboriginal Population of Thompson: 1996

Type of Income	Average Annual Income (\$) in 1996 ¹		
	Total Thompson Population	Thompson Aboriginal Population ²	Manitoba
Income Per Person	31,257	19,963	25,196
Household Income ³	59,134	40,060	43,404
Family Income ⁴	62,918	40,645	50,236

Source: Statistics Canada, 1996 Census of Canada.

Notes:

- 1 - Incomplete data: 20 per cent sample data.
- 2 - The definition of an Aboriginal person in the 1996 Census included Registered Indians, those reporting Aboriginal ancestry, those identifying as Aboriginal and all Band Members.
- 3 - The definition of an Aboriginal household included those households where either one spouse is Aboriginal, or where 50 per cent of all other members are Aboriginal.
- 4 - The definition of an Aboriginal family included those households in which one spouse is defined as Aboriginal.

Further, more detailed information on these different types of income is provided in the sections below.

Personal Income

Table 3.23 indicates the distribution of personal income among Thompson residents, Thompson's Aboriginal population and the province, according to the 1996 Census of Canada. The data indicate that the average personal income in Thompson in 1996 of \$31,257 was higher than the average earned by Thompson Aboriginals and the average Manitoba resident.

Table 3.23 Average Personal Income and Distribution of Income for Thompson’s Total and Aboriginal Populations and Manitoba: 1996

Personal Income \$, 1996 ¹	Proportion of the Population (%) ²		
	Total Thompson Population	Thompson Aboriginal Population ³	Manitoba
Under \$10,000	25.3	39.5	29
\$10,000 - \$19,999	16.3	22.7	26
\$20,000 - \$29,999	13.4	10.5	17
\$30,000 - \$39,999	11.0	8.4	12
\$40,000 - \$49,999	9.2	7.9	7
\$50,000 - \$59,999	9.8	6.6	4
\$60,000 and over	15.1	4.3	5
Average Personal Income:	\$31,257	\$19,963	\$22,667

Source: Statistics Canada, 1996 Census of Canada.

Notes:

- 1 - Incomplete data: 20 per cent sample data
- 2 - Totals may not add due to rounding.
- 3 - The definition of an Aboriginal person in the 1996 Census included Registered Indians, those reporting Aboriginal ancestry, those identifying as Aboriginal and all Band Members.

Family Income

Table 3.24 below indicates the distribution of average family income in Thompson at the time of the 1996 Census of Canada. In general, Thompson families have incomes that are higher than those seen throughout the province. As well, family incomes for Thompson’s Aboriginal population tend to be significantly lower than those for the Thompson population as whole.

Table 3.24 Average Family Income and Distribution of Income for Thompson's Total and Aboriginal Populations and Manitoba: 1996

Family Income \$, 1996 ¹	Proportion of the Population (%) ²		
	Total Thompson Population	Thompson Aboriginal Population ^{3,4}	Manitoba
Under \$10,000	6.1	13	5
\$10,000 - \$19,999	11.0	25	11
\$20,000 - \$29,999	5.4	10	15
\$30,000 - \$39,999	7.6	8	14
\$40,000 - \$49,999	8.5	8	13
\$50,000 - \$59,999	8.4	6	12
\$60,000 - \$69,999	12.8	10	9
\$70,000 and greater	40.5	19	21
Average Family Income:	\$62,918	\$40,645	\$50,236

Source: Statistics Canada, 1996 Census of Canada.

Notes:

- 1 - Incomplete data: 20 per cent sample data.
- 2 - Totals may not add due to rounding.
- 3 - The definition of an Aboriginal person in the 1996 Census included Registered Indians, those reporting Aboriginal ancestry, those identifying as Aboriginal and all Band Members.
- 4 - The definition of an Aboriginal family included those households in which one spouse is defined as Aboriginal.

Household Income

The distribution of average household income in Thompson, as per the 1996 Census of Canada, is presented in [Table 3.25](#). As with household income, family incomes in Thompson were generally higher than for the provincial population. The exception is Thompson's Aboriginal population which had relatively lower household incomes in 1996.

Table 3.25 Average Household Income and Distribution of Income for all Private Households in Thompson's Total and Aboriginal Populations and in Manitoba: 1996

Household Income \$, 1996 ¹	Proportion of Total Households (%) ²		
	Total Thompson Population	Thompson Aboriginal Population ^{3,4}	Manitoba
Under \$10,000	7	14	8
\$10,000 - \$19,999	12	25	19
\$20,000 - \$29,999	7	10	15
\$30,000 - \$39,999	8	7	14
\$40,000 - \$49,999	10	10	12
\$50,000 - \$59,999	10	7	10
\$60,000 - \$69,999	11	8	7
\$70,000 - \$79,999	36	18	16
Average Household Income:	\$59,314	\$40,060	\$43,404

Source: Statistics Canada, 1996 Census of Canada.

Notes:

- 1 - Incomplete data: 20 per cent sample data.
- 2 - Totals may not add due to rounding.
- 3 - The definition of an Aboriginal person in the 1996 Census included Registered Indians, those reporting Aboriginal ancestry, those identifying as Aboriginal and all Band Members.
- 4 - The definition of an Aboriginal household included those households where either one spouse is Aboriginal, or where 50 per cent of all other members are Aboriginal.

Thompson Business Economy

Table 3.26 below highlights the number and types of businesses operating in Thompson. The information in this table should be used with caution as it is over a year old. As can be seen in the table, there is a wide array of businesses operating in the community. The number and type of businesses in Thompson represent a shift away from central reliance on the INCO mine and its operations. Available goods and services range from retail outlets and a variety of restaurant and hospitality businesses, to firms providing industrial service and supply and a well-established transportation sector. With the increasing reliance on the community as a regional service and supply centre by outlying northern and Aboriginal communities, it is expected that this sector will expand in the future (North Central Development Corporation, personal communication, 2002).

INCO's experience in the community indicates that there are a number of local firms capable of providing goods and services to industry. Development of local firms in this sector, however, has been limited because there is an all-weather road connection between Thompson and Winnipeg which makes the transportation of goods from

southern centres a viable option. Important services available locally include sale and repair of heavy equipment (e.g., Caterpillar/Toromont), hydraulic repair, sale of large tires and retreads (e.g., North Land Tire), safety and industrial outfitting, and fabrication. Of these, fabrication is the one service currently running close to capacity (INCO Ltd., personal communication, 2002). There are also three major trucking companies with bases in Thompson, capable of servicing the industrial sector.

Table 3.26 Number of Businesses, Trade and Professional Services Available in the City of Thompson by Business Type

Type of Business, Trade or Professional Service	Number of Firms
Accommodations	9
Agricultural Services and Supplies	2
Automotive	18
Construction/Hardware	4
Financial	4
Food and Beverages	36
Furniture, Appliance/Home	10
General Merchandise	22
Other Services	24
Professional Services	1
Veterinarians, pets	1
Repair Services	5

Source: Mystery Net Project, 2001.

Notes:

1 - The information listed is over a year old. This is the most recent complete listing of businesses in Thompson.

3.3.2.2 All Project Region Communities

The following outlines labour force characteristics of communities in the Project Region. These include First Nation communities, incorporated communities and Northern Affairs communities. For the purposes of consistency, data on Thompson and the LGD of Mystery Lake, as well as communities within the Local Region (reserve community of Nelson House and the Northern Affairs communities of Nelson House and South Indian Lake) are included in the data presented. Further details can be found in [Appendix 1](#), Section 3.

Labour Force Characteristics

Employment, Participation and Unemployment Rates

Table 3.27 below provides employment, participation and unemployment statistics from 1996 Census data for communities in the Project Region, including Thompson and communities in the Local Region, as compared to the Province. Based on these data, the participation rates and employment rates for First Nation and Northern Affairs communities in the Project Region were both lower than those in Project Region incorporated communities or the Province. Further, the unemployment rates in Project Region First Nation and Northern Affairs communities were about four times as great as rates seen in Project Region Incorporated Communities and the Province.

Table 3.27 Employment, Participation and Unemployment Rates for Project Region Communities and the Province: 1996

Characteristics ^{1,2}	Project Region Communities			Manitoba
	First Nation Communities ³	Incorporated Communities ⁴	South Indian Lake ⁵	
The potential labour force ⁶	6,550	11,175	515	855,880
The active labour force ⁷	3,090	8,785		567,825
• Employed ⁸	2,020	8,065	210	523,210
• Unemployed ⁹	1,055	725	65	44,615
Persons not in the labour force	3,460	2,385	2,145	288,055
Participation rate	47.2%	78.6%	40.8%	66.3%
Employment rate	65.3%	91.8%	69.0%	92.1%
Unemployment rate	34.6%	8.2%	31.0%	7.9%

Source: Statistics Canada, 1996 Census of Canada.

Notes:

- 1 - Data incomplete: 20 per cent sample data.
- 2 - Totals may not add due to rounding.
- 3 - NCN is included with Project Region First Nation communities. Other Project Region First Nation communities are Tataskweyak Cree Nation, War Lake First Nation, York Factory First Nation, Fox Lake Cree Nation, Pimicikamak Cree Nation and Norway House First Nation.
- 4 - Thompson and the Town of Gillam make up the Project Region's incorporated communities.
- 5 - The only Northern Affairs community for which data were available was South Indian Lake. Other Northern Affairs communities in the Project Region for which Census data were not available include Ilford, Pikwitonei, Thicket Portage, Wabowden, Cross Lake and Norway House.
- 6 - Statistics Canada defines the potential labour force as all persons in a given population, excluding institutional residents, age 15 years and over.
- 7 - The active labour force includes all persons 15 years of age and over, excluding institutional residents, who, during the week (Sunday to Saturday) prior to Census Day were either employed or unemployed.
- 8 - The "employed" include all persons who "worked for pay or in self-employment" in the paid labour force in the week prior to enumeration. This includes all persons working for wages or salaries, all self-employed persons (with or without paid help) working in their own business, farm or professional practice, and all persons working without pay on a family farm or business during the reference week. The "employed" also include those persons absent from their job or business for the entire week because of vacation, illness, a labour dispute at their place of work or other reasons.
- 9 - The classification of unemployed does not account for the underemployed, or those individuals working part time but desiring a full time position. As well, the classification does not include discouraged workers: those individuals who wish to work but have ceased looking because they do not believe they will find a job. Unemployment numbers may be understated for these reasons.

In terms of types of employment, approximately ten per cent of the individuals working in Project Region First Nations communities are employed in construction industries. These figures vary from 0 per cent in War Lake to 18 per cent in Fox Lake (Statistics Canada 1996).

Employment data from Statistics Canada were only available for the Project Region Northern Affairs community of South Indian Lake. As mentioned previously, employment in this community is concentrated in the fishing and trapping, educational

services and government services industries (Statistics Canada 1996). More general information available from community profiles put together by the provincial government indicates that residents of other Northern Affairs communities in the Project Region also work in similar industries. There is also some mining, forestry and commercial fishing in these communities (Government of Manitoba 2001).

Project Region incorporated communities include the City of Thompson and LGD of Mystery Lake and the Town of Gillam. Types of employment in the City of Thompson are discussed in the previous section and are based primarily in the mining, retail trade and health and social services industries. Employment in the Town of Gillam is heavily influenced by the three Manitoba Hydro generating stations located in the vicinity of the community. Manitoba Hydro is the largest employer in the community and helps to support a number of other business sectors (Statistics Canada 1996).

Income Levels

Table 3.28 below provides income characteristics for Project Region communities, as compared to the Province, based on 1996 Census data. In general, average annual incomes for Project Region First Nation and Northern Affairs communities were substantially lower than those seen in Project Region Incorporated Communities or Manitoba as a whole.

Table 3.28 Average Annual Income Levels for Project Region Communities: 1996

Type of Income	Project Region Communities ^{1,2}			Manitoba
	First Nation Communities ³	Incorporated Communities ⁴	South Indian Lake ⁵	
Personal Income	\$11,811	\$31,600	\$11,248	\$22,667
Family Income	\$29,297	\$63,537	\$28,555	\$50,236
Household Income	\$31,493	\$59,832	\$32,816	\$43,404

Source: Statistics Canada, 1996 Census of Canada.

Notes:

- 1 - Data incomplete: 20 per cent sample data.
- 2 - Totals may not add due to rounding.
- 3 - NCN is included with Project Region First Nation communities. Other Project Region First Nation communities are Tataskweyak Cree Nation, York Factory First Nation, Fox Lake Cree Nation, Pimicikamak Cree Nation and Norway House First Nation. Income data were not available for Fox Lake Cree Nation or War Lake First Nation
- 4 - Thompson and the Town of Gillam make up the Project Region's incorporated communities.
- 5 - The only Northern Affairs community for which data were available was South Indian Lake. Other Northern Affairs communities in the Project Region for which Census data were not available include Ilford, Pikwitonei, Thicket Portage, Wabowden, Cross Lake and Norway House.

Education and Training

Table 3.29 below presents education and training levels for residents in the Project Region. In general, residents in Project Region's Incorporated Communities had higher levels of education than those seen in the region's First Nation and Northern Affairs communities (only data for South Indian Lake available).

Table 3.29 Highest Level of Education for Communities in the Project Region: 1996

Level of Education	Project Region Communities ^{1,2}			Manitoba
	First Nation Communities ³	Incorporated Communities ⁴	South Indian Lake ⁵	
Number of People	6,560	11,175	515	855,880
Less than Grade 9	32%	9%	33%	13%
Grades 9 to 12:	44%	41%	49%	40%
- Without Secondary School Graduation Certificate	38%	29%	45%	29%
- With Secondary School Graduation Certificate	6%	12%	4%	11%
Trades Certificate or Diploma	3%	5%	2%	3%
Other Non-University Education Only	12%	25%	7%	21%
- Without Certificate Or Diploma	5%	5%	2%	5%
- With Certificate Or Diploma	7%	20%	5%	16%
University:	10%	20%	9%	23%
- Without Degree	6%	10%	7%	5%
- With Bachelor's Degree or Higher	3%	10%	2%	12%

Source: Statistics Canada, 1996 Census of Canada.

Notes:

- 1 - Data incomplete: 20 per cent sample data.
- 2 - Totals may not add due to rounding.
- 3 - NCN is included with Project Region First Nation communities. Other Project Region First Nation communities are Tataskweyak Cree Nation, York Factory First Nation, Fox Lake Cree Nation, Pimicikamak Cree Nation and Norway House First Nation.
- 4 - Thompson and the Town of Gillam make up the Project Region's incorporated communities.
- 5 - The only Northern Affairs community for which data were available was South Indian Lake. Other Northern Affairs communities in the Project Region for which Census data were not available include Ilford, Pikwitonei, Thicket Portage, Wabowden, Cross Lake and Norway House.

3.3.3 Effects and Mitigation

In the Project Region, economic effects in most communities will primarily be felt during the Project's construction phase. Few effects are anticipated in most communities outside of the Local Region during the operations phase of the Project. In some cases, economic effects of the Project beyond the Local Region are limited to the City of Thompson (given its proximity to the Project) and, in such cases, these are noted in the sections below.

3.3.3.1 During Construction

During construction, Project Region economic effects (beyond the Local Region) will stem primarily from employment opportunities associated with the Project. The business economy of Thompson will also be positively affected, particularly service and retail sectors. There may also be limited Project Region effects beyond the Local Region as a result of Project-related training opportunities for Aboriginal residents.

Employment Effects

The following presents possible employment in the Project Region stemming from construction of the Project. Employment levels represent a best possible estimate and actual levels may vary. As in the Local Region, employment estimates vary according to stage of construction and, as such, these stages are presented separately in the analysis below.

On a community-by-community basis, Project construction employment will be lower for Project Region communities outside of the Local Region, than for those within the Local Region. As well, employment stemming from the Project is likely to be greater for the Region's Aboriginal residents than others, primarily because Aboriginal residents in northern Manitoba (as defined in the current Burntwood-Nelson Agreement – see [Figure 2.4](#), Section 2.1.2.3) are likely to receive hiring preference. For the purposes of this analysis, it is assumed that first preference hiring will occur for Aboriginal residents in the Project Region, as defined by the Burntwood River and Nelson River areas (see 3.1.1.2 for details).

[Table 3.30](#) below summarizes Project construction employment opportunities at peak (greater detail on available employment opportunities is provided in Section 3.1.1.2) and, of these, the estimated maximum peak positions that may be held by Aboriginals living in the Project Region. [Table 3.31](#) shows how the peak Project construction positions shown

in Table 3.30 could equate to peak person-years of employment. In both Tables 3.30 and 3.31 the estimates of Project Region Aboriginal employment are shown both excluding and including the Local Region. As well, both the estimated peak positions and person-years of employment consider the effects of pre-Project training initiatives.

Table 3.30 Estimated Maximum Peak Positions Employment for Project Region Aboriginal Residents during Project Construction

Trade & Experience Group	Estimated Maximum Peak Positions Employment ¹		
	Total Number of Positions Available ²	(Excluding the Local Region) Estimated Positions Held by Project Region Aboriginal Residents ³	(Including the Local Region) Total Estimated Positions Held by Project Region Aboriginal Residents ³
Stage 1 (Years 1-2) Infrastructure Development⁴			
Trainees and Positions with 0 – 24 months experience ⁴	130	40-52 ⁵	130 ⁶
Construction Support & Non-designated Trades, 3 – 4 and >4 yrs. Experience	10	3	3
Designated Trades Positions	17	6	9
Stage 2 (Years 3-6) Major Works Construction Installation⁵			
Trainees and Positions with 0 – 24 months experience ⁴	265	134-173 ⁵	198-256 ^{5,6}
Construction Support & Non-designated Trades, 3 – 4 and >4 yrs. Experience	124	8	10
Designated Trades Positions	385	15-33 ⁵	29-61 ^{5,6}

Notes:

- 1 - This information represents an estimate only, based on current regulations, Project plans as of 2002, and past experience with similar projects. Contractors will determine specific job requirements when the Project is being built. Actual employment requirements will vary from the estimate presented above.
- 2 - The number of positions refers to the maximum during the stated construction stage. These positions will not be concurrent. Actual number of positions at a given time will be less than the estimated maximum. The positions identified are those potentially filled by job orders. Excludes Manitoba Hydro staff and contractor supervisory and management positions.
- 3 - Project Region is defined in Section 3.1.1.2, and includes communities defined by the Burntwood River and Nelson River areas.
- 4 - The effects of the assumed employment preference are observed in the positions for trainees and workers with 0 to 24 months combined training and experience, as there are more workers in northern Manitoba available for these types of positions than are required for the construction workforce.
- 5 - The high end of the range reflects the number of positions that could be taken by Project Region Aboriginal residents assuming existing capacity of NCN members, NCN training targets fully achieved and other Aboriginal residents in the Project Region receive pre-Project training for up to 15 designated trades positions. The low end of the range reflects the number of positions that could go to Project Region Aboriginal residents assuming approximately 50 per cent achievement of NCN training targets and the existing capacity of other Aboriginal residents in the Project Region.
- 6 - When Aboriginal residents from the Local Region are included, all the non-designated trades and construction support occupations requiring less than 24 months of combined training and experience could go to Aboriginal residents in the Project Region (maximum combined peak of 130 positions during Stage 1 and 198-256 positions during Stage 2).

Table 3.31 Estimated Maximum Person-years Employment for Project Region Aboriginal Residents during Project Construction

Trade & Experience Group	Estimated Maximum Person-years Employment ¹		
	Total Number of Person-years Available ²	(Excluding the Local Region) Estimated Person-years Secured by Project Region Aboriginal Residents ³	(Including the Local Region) Total Estimated Person-years Secured by Project Region Aboriginal Residents ³
Stage 1 (Years 1-2) Infrastructure Development⁴			
Trainees and Positions with 0 – 24 months experience ⁴	92.0	28.3-36.8 ⁵	92.0 ⁶
Construction Support & Non-designated Trades, 3 – 4 and >4 yrs. Experience	8.3	2.5	2.5
Designated Trades Positions	12.8	4.5	6.8
Total	113.2	35.3-43.8	101.3
Stage 2 (Years 3-6) Major Works Construction Installation⁵			
Trainees and Positions with 0 – 24 months experience ⁴	437.9	221.4-285.9 ⁵	327.2-423.0 ^{5,6}
Construction Support & Non-designated Trades, 3 – 4 and >4 yrs. Experience	127.5	8.2	10.3
Designated Trades Positions	430.5	15.7-32.4 ⁵	32.4-68.2 ^{5,6}
Total	995.9	245.3-326.5	369.9-501.5

Notes:

- 1 - This information represents an estimate only, based on current regulations, Project plans as of 2002, and past experience with similar projects. Contractors will determine specific job requirements when the Project is being built. Actual employment requirements will vary from the estimate presented above.
- 2 - The number of person-years refers to the total for the stated construction stage. The person-years of employment are for positions potentially filled by job orders. Excludes Manitoba Hydro staff and contractor supervisory and management positions.
- 3 - Project Region is defined in Section 3.1.1.2, and includes communities defined by the Burntwood River and Nelson River areas.
- 4 - The effects of the assumed employment preference are observed in the positions for trainees and workers with 0 to 24 months combined training and experience, as there are more workers in northern Manitoba available for these types of positions than are required for the construction workforce.
- 5 - The high end of the range reflects the number of positions that could be taken by Project Region Aboriginal residents assuming existing capacity of NCN members, NCN training targets fully achieved and other Aboriginal residents in the Project Region receive pre-Project training for up to 15 designated trades positions. The low end of the range reflects the number of positions that could go to Project Region Aboriginal residents assuming approximately 50 per cent achievement of NCN training targets and the existing capacity of other Aboriginal residents in the Project Region.
- 6 - When Aboriginal residents from the Local Region are included, all the non-designated trades and construction support occupations requiring less than 24 months of combined training and experience could go to Aboriginal residents in the Project Region (maximum of 92.0 person-years during Stage 1 and 327.2-423.0 person-years during Stage 2).

Based on [Table 3.30](#) above, it is estimated that Aboriginal residents in the Project Region, outside of the Local Region, could secure between 31 and 39 per cent of peak positions (about 49 to 61 peak positions) during the first stage of construction. This equates to between 31 and 39 per cent of the available person-years employment (35.3 to 43.8 person-years) during the first stage of construction (see [Table 3.31](#)). In total, based on [Table 3.30](#) and [Table 3.31](#), Aboriginal residents in the Project Region (including those in the Local Region) could secure up to 90 per cent of peak positions (142 at maximum) during Stage 1, which equates to 90 per cent of the available person-years of employment (101.3 person years). Almost all of these positions would require less than 24 months of experience (including trainees). The ranges in estimated peak Project positions and person-years employment for Aboriginal residents in the Project Region indicate uncertain effects from pre-Project training activities, both in the Local Region and elsewhere in the Project Region.

The estimates shown in [Table 3.30](#) and [Table 3.31](#) for Stage 1 construction during Years 1 and 2 are not affected by the assumed hiring preference policy. This is primarily due to the anticipated number of negotiated contracts with NCN businesses during this first stage of construction (expected to constitute the majority of work during Stage 1). Under Article 2.9 of the existing Burntwood-Nelson Agreement (BNA) (the BNA is currently being renegotiated), northern Aboriginal contractors with negotiated contracts are able to directly hire northern Aboriginal residents without having to go through the job order process to which the northern employment preference applies. It is anticipated that NCN contractors engaged in negotiated contracts would show preference in hiring qualified NCN members.

During the second stage of construction, it is anticipated that Project Region Aboriginal residents, outside of the Local Region, could secure between 20 and 28 per cent of peak positions (or 157 to 214 peak positions). This equates to between 25 to 33 per cent of the available person-years of employment during this stage (or 245.3 to 326.5 person-years). In total, during the second stage of construction, Aboriginal residents in the Project Region (including those in the Local Region) could secure between 31 and 42 per cent of peak positions, or 237 to 327 peak positions. This equates to between 37 and 50 per cent of the available person-years of employment, or 369.9 to 501.5 person-years. (As with the first stage of construction, the range indicates uncertain effects from pre-Project training activities, both in the Local Region and elsewhere in the Project Region.)

During Stage 2 of construction, Project participation by Project Region Aboriginal residents will be more heavily influenced by employment preference policy and pre-Project training activities than during Stage 1.

Employment preference, as assumed in this assessment, will improve the ability of Aboriginals living in the Project Region to obtain Project employment. In particular, employment preference policy will affect the number of positions held by Project Region Aboriginals that are trainee positions in the non-designated and construction support trades and those that require zero to 24 months of combined training and experience. Overall, there are more Aboriginal workers available in the first preference region (i.e., the Project Region) and in northern Manitoba, as a whole, than are required for these positions. As such, it is expected that the majority of available positions in these areas will be held by Project Region Aboriginal residents – i.e., very few, if any, of these positions will be held by Northern Manitoba Aboriginal residents outside of the Project Region.

Conversely, for skilled positions in the workforce (which dominate the required workforce during Stage 2), there is a shortage of qualified northern Aboriginal workers in the designated trades and experienced non-designated trades (i.e., 3 to 4 years of combined training and work experience). This means that employment in these positions, for Aboriginal residents throughout the north, is only minimally influenced by employment preference. Instead, the supply of qualified candidates will act as the limiting factor for northern Aboriginal employment, including for Aboriginals resident in the Project Region.

For non-Aboriginal residents living in the Project Region, Project construction is expected to have more limited employment effects. Non-Aboriginal residents living in the Project Region (primarily in Thompson and, to a lesser extent, Gillam) will be covered under the assumptions adopted here by the third level of employment preference. It is likely that those who do find employment on the Project will primarily be employed during Stage 2 in highly skilled positions (i.e., when there is a high demand for skilled workers and fewer qualified northern Aboriginals to fill the available positions).

Employment effects for non-Aboriginal Project Region residents are also likely to be limited by interest in Project employment. Unemployment rates among non-Aboriginal residents in the Project Region are relatively low, especially when compared to those seen among the Region's Aboriginal communities (e.g., in 1996, less than eight per cent unemployment among non-Aboriginal Thompson residents, compared to over 30 per cent

unemployment in Aboriginal Project Region communities). As well, key person interviews in Thompson suggest that non-Aboriginal residents who do become unemployed are more likely to relocate elsewhere to find employment. For these reasons, it is predicted that fewer non-Aboriginal residents in the Project Region will be attracted to work on the Project, particularly given the seasonal and short-term nature of the work.

Previous experience (most notably on the construction of the Limestone Generating Station) indicates that the availability of appropriate retention support services will be important to retaining Aboriginal employees at the Wuskwatim construction site. On-site retention support services for all Aboriginal employees working on the construction project will be provided as part of the broader retention strategy being developed by a committee of NCN and Manitoba Hydro representatives.

Construction employment on the Project will generate new employment for the Project Region, particularly among its Aboriginal residents. It is likely that most of this Project-related employment will go to Aboriginal residents who currently work on a seasonal, on-call or part-time basis or are unemployed. For these individuals, construction employment on the Project also has the potential to lead to an increase in income (as a result of both higher wages and more working hours). This, in turn, has the ability to affect quality of life and social well-being, generate spin-off effects for local businesses and increase federal government revenues (through tax revenues and reduced social assistance – see Section 3.5). Project employment will also assist in building longer-term capacity for Project Region Aboriginal residents to participate in the northern wage economy.

Business Effects

During construction of the Project, business effects in the Project Region, beyond the Local Region, will be limited to the City of Thompson. The extent and magnitude of these benefits has not been predicted.

No construction contracts, beyond those negotiated with NCN, are expected to be designated for negotiated contracting under Manitoba Hydro's Northern Purchasing Policy. As a result, it is expected that there will be very limited participation by other Northern businesses, including those in the Project Region, during Project construction.

Similarly, it is expected that residents in the Local Region (primarily in Nelson House) will take up the limited range of entrepreneurial opportunities that are likely to be

associated with the construction project (e.g., convenience store at the site). It is possible, however, that some of these opportunities may be taken up by Thompson residents, given the proximity of this community to the construction site.

In Thompson, business effects will occur primarily as a result of indirect Project expenditures. (Thompson is a regional centre and the next closest community after Nelson House to the Project.) Most notably, Thompson businesses that provide services to workers (e.g., restaurants, recreational facilities, hotels) and retail businesses are likely to benefit from the re-spending of construction worker wages. Most of these expenditures will be made during days off (currently expected to be Saturday night and Sundays), as many construction workers are likely to spend their time off in Thompson. These indirect increases in demands for goods and services may worsen the current shortage of entry-level labour in Thompson.

Some commercial and industrial supply services may also benefit from support to construction contractors (e.g., small engine repair shops, heavy duty equipment repair, hardware suppliers) and possibly supply of bulk fuels to the Project. Services supporting the movement of workers and contractors to and from the Wuskwatim construction site will also benefit (i.e., air and ground transportation).

Training Effects

In the Project Region, and outside of the Local Region, training effects of the Project will stem from both pre-Project and on-the-job training opportunities, but are expected to be much more limited than in the Local Region. Training effects in the Project Region will almost wholly be felt by its Aboriginal residents for two reasons:

- Pre-Project training funds provided by Manitoba Hydro and the governments of Manitoba and Canada specifically for the Project and the Gull/Keeyask Generating Station project are designated exclusively for northern Aboriginal residents.
- Trainee positions, for which on-the-job training is provided, will likely go to northern Aboriginal residents, primarily within the region assumed for first preference (i.e., the Project Region).

Within the Project Region, but outside of the Local Region, some of the monies designated for training will be managed by Manitoba Advanced Education and Training (AET) to assist northern Aboriginal residents access pre-Project training. Aboriginal residents in the Project Region, and elsewhere in northern Manitoba who are interested in

Project training programs can approach AET for assistance. AET will provide assessment and career counseling services, and facilitate access to literacy training and academic upgrading, where required. AET will also help eligible individuals find and access relevant technical training programs related to construction positions on the Project. The number of residents who participate in this training is difficult to estimate, as the level of interest among Aboriginal residents in the Project Region to participate in Project training programs is not yet known.

For those who do participate in pre-Project training activities, the skills and experience gained will improve their ability to participate in Project construction. This is particularly true for those who achieve higher levels of training and experience, qualifying them for more skilled positions during Project construction. It is also possible that, over the long-term, the skills and experience developed may help Project Region residents secure jobs during the construction of other northern hydroelectric developments. Trades training received as a result of the Project can also be used in other areas (e.g., forestry and mining) and may help Aboriginal residents in the Project Region to participate in the northern economy. Ultimately, the magnitude of these effects will vary, depending on the number of people who successfully complete their chosen training program.

3.3.3.2 During Operations

Operations phase Project Region economic effects for communities outside the Local Region will be very limited. There will be very few operations jobs available (normally from two to six employees, including three or four technicians and two utility workers). Maintenance contracts for the Project buildings and infrastructure could also provide a source of direct small-scale, long-term employment opportunities.

3.3.4 Cumulative Effects

There are several Projects proposed within the Project Region, which could have economic effects (primarily employment opportunities) that overlap in the Project Region with those of the Project.²³ These include:

- The Wuskwatim Transmission Project, which, if approved, will start construction concurrently with the construction phase for the Project.
- The Gull/Keeyask Generating Station, with a potential construction start of 2007.
- The Conawapa Project, which has an earliest possible construction start of 2006.

²³ Section 2.2.7 provides full details on the approach and methodology for assessing cumulative effects and the future projects and activities included as part of the cumulative effects assessment for this SEIA.

- The Notigi Project, which is likely to start construction after 2009, near the end of the Project construction phase and into the Project operations phase.
- Bipole III, with a potential construction start of 2006.

The Wuskwatim Transmission Project, if approved, will start construction concurrent with the construction phase for the Project (i.e., in late 2003). The Transmission Project will offer limited seasonal employment and business opportunities for residents in the Project Region, most of which will be felt in the Local Region (where the majority of the transmission facilities are located).

Current estimates suggest that clearing and construction of transmission lines associated with the Wuskwatim Transmission Project will provide about 25 to 30 winter season jobs in any given year. This will provide small additional employment opportunities for residents in the Local Region, particularly during the winter months when most Project construction workers will be laid off.

Business opportunities associated with the Wuskwatim Transmission Project are also limited (e.g., line clearing, surveying, material transportation). The extent of NCN business participation is still being discussed internally at NCN and with Manitoba Hydro. Outside of the Local Region, it is also likely that Thompson businesses that provide services to construction workers (e.g., hotels, restaurants, bars, recreation facilities) may experience some additional benefit as workers constructing the proposed Birchtree Station (just south of Thompson) are likely to stay in the community.

Development of the Gull/Keeyask Generating Station and/or the Conawapa Project, which have estimated peak workforce requirements of 1,200 to 1,500 and 1,800 workers, respectively, have the greatest potential to generate substantial amounts of additional construction employment for Project Region residents.

The timing of construction for the Gull/Keeyask Generating Station (currently protected to start 6 to 7 years of construction in 2007) and, possibly, the Conawapa Project (earliest possible construction start of 2006, for a first power in-service date of 2015) partially overlaps with construction of the Project and partially occurs after Project construction is complete. Both of these projects are much larger in scale than the proposed Project and will provide more residents of the Project Region, particularly outside of the Local Region, with employment opportunities. These projects would also provide additional job opportunities for Project Region residents that make use of the experience and skills gained while working on the Project. They would also extend the opportunities available

within proximity of the Project Region to complete the necessary work requirements for trades apprenticeships (i.e., apprentices from the Project Region may be able to complete work experience requirements within the North).

If developed, the Notigi Project, which at the earliest would start construction after 2009, also has the potential to provide additional employment opportunities for Project Region residents, beyond the completion of Project construction. Many of these opportunities would likely be secured by residents of the Local Region.

The Bipole III project, as currently planned, also partially overlaps with construction of the Project. The Bipole III project may provide some additional job opportunities for residents in the Project Region. Like the Wuskwatim Transmission Project, these will be very limited and will be seasonal in nature, occurring primarily in the winter months. Employment opportunities on the Bipole III project are likely to be secured by Project Region residents in the vicinity of the transmission line (i.e., not by Local Region residents).

The Kelsey Upgrade (maintenance program), expected to take place over the next five to eight years, also partially overlaps with the Project. The Kelsey Upgrade could provide some additional, albeit limited and highly skilled, employment opportunities for Project Region residents.

3.3.5 Residual Effects and Significance

This section presents the estimated residual effects of the Project to economy in the Project Region. Residual effects incorporate, to the extent possible, cumulative effects noted in Section 3.3.4 and consider the effect of impact management measures (both mitigation and enhancement measures) that are planned. Based on criteria outlined in Section 2.2.8, the significance of these effects for the Region as a whole is assessed, along with the general direction of change (positive, negative or elements of both).

[Table 3.32](#) presents a summary of residual effects and significance of effects (including direction of change – positive or negative) by phase. No significant adverse effects are assessed with respect to the Project's socio-economic effects on the economy of the Project Region.

Table 3.32 Residual Effects and Significance of Effects on the Economy of the Project Region

Project Phase	Residual Effects	Significance ¹
Construction	Increased Employment	Moderate (+) (Significant for some Aboriginal communities)
	Increased Incomes	Moderate (+) (Significant for some Aboriginal communities)
	Increased Capacity through Project Training	Negligible (+) (Insignificant)
Operations – NO RESIDUAL EFFECTS		

Note:

1 - See Section 2.2.8 for definitions adopted for this assessment.

During the Project’s construction phase, the Project Region, outside of the Local Region, is expected to experience moderate positive employment effects, but only negligible (insignificant) positive business and training effects directly related to the Project. In the area of employment, where the largest number of Project Region residents is likely to be affected, the magnitude of positive residual effects will depend on the outcome of proposed mitigation measures, especially any workplace retention strategies to be developed for Aboriginal employees on the construction site, and is likely to be significant for at least some Aboriginal communities.

During the Project’s operations phase, economic effects in the Project Region, outside of the Local Region, are expected to be negligible.

During both the Project’s construction and operations phases, there is potential for Project Region economic effects to be much greater, particularly in terms of employment, if either the Gull/Keeyask Generating Station or Conawapa Project are approved and start to be developed.

It is anticipated that Aboriginal residents in the Project Region, outside of the Local Region, could secure between 31 and 39 per cent of peak positions (about 49 to 61 peak positions). This translates to 31 to 39 per cent of the available person-years of employment) (35.3 to 43.8 person-years of employment) during the first stage of

construction. In total, Aboriginal residents in the Project Region (including those in the Local Region) could secure up to 90 per cent of peak positions (142 peak positions), or 90 per cent (101.3 person-years) of the available person-years of employment during Stage 1. During the second stage of construction, it is anticipated that Project Region Aboriginal residents, outside of the Local Region, could secure between 20 and 28 per cent of peak positions (about 157 to 214 peak positions) or 25 to 33 per cent of person-years of employment (245.3 to 326.5 person-years of employment). In total, during the second stage of construction, Aboriginal residents in the Project Region (including those in the Local Region) could secure between 31 and 42 per cent of peak positions, or between 37 and 50 per cent of the available person-years of employment. The ranges indicate uncertain effects from pre-Project training activities, both in the Local Region and elsewhere in the Project Region.

Non-Aboriginal residents in the Project Region are expected to experience more limited Project-related employment effects. Those who do find employment on the Project will primarily be employed during Stage 2 in highly skilled positions (i.e., when there is a high demand for skilled workers and fewer qualified northern Aboriginals to fill the available positions).

During the operations phase, only a very small number of employees will be required (normally from two to six employees, including three or four technicians and two utility workers). Maintenance contracts for the Project buildings and infrastructure could also provide a source of direct small-scale, long-term employment opportunities.

During construction of the Project, business effects in the Project Region, beyond the Local Region, will be limited to the City of Thompson. The extent and magnitude of these benefits has not been predicted. Similarly, it is expected that residents in the Local Region (primarily in Nelson House) will take up the limited range of entrepreneurial opportunities that are likely to be associated with the construction projects (e.g., convenience store at the site). In Thompson, business effects will occur primarily as a result of indirect Project expenditures. Most notably, Thompson businesses that provide services to workers (e.g., restaurants, recreational facilities, hotels) and retail businesses are likely to benefit from the re-spending of construction worker wages. Some commercial and industrial supply services may also benefit from support to construction contractors (e.g., small engine repair shops, heavy duty equipment repair, hardware suppliers) and possibly supply of bulk fuels to the Project. Services supporting the movement of workers and contractors to and from the Wuskwatim construction site will also benefit (i.e., air and ground transportation).

Training effects of the Project will stem from both pre-project and on-the-job training opportunities, but are expected to be much more limited than in the Local Region. Training effects in the Project Region will almost wholly be felt by its Aboriginal residents. Within the Project Region, but outside of the Local Region, some of the monies designated for training will be managed by Manitoba Advanced Education and Training (AET) to assist northern Aboriginal residents access pre-Project training. The number of residents who participate in training is difficult to estimate, as the level of interest among Aboriginal residents in the Project Region to participate in Project training programs is not known. Some Aboriginal residents in the Project Region (outside of the Local Region) are also likely to secure trainee positions during Project construction.

3.3.6 Monitoring and Follow-up

Aboriginal employment at the construction site from within the Project Region will be monitored and the need for impact management assessed using the same process and participants (Employment Advisory Committee) as that identified for Local Region employment effects (see Section 3.2.6). This involves monitoring key indicators of Aboriginal employment and turnover rates of Aboriginal employees (collected by Manitoba Hydro through Project contractors). Monitoring results will help determine whether impact management measures, beyond those specified as part of an employee retention strategy, are required.

Outcomes of pre-Project training (sponsored by HRDC, Manitoba Hydro and AET) will be tracked, including degree to which trainees obtain employment on the Project.

Business participation by businesses from the Project Region will be monitored.

3.4 NORTHERN REGION

3.4.1 Sources of Effects

Sources of economic effects in the Northern Region as a result of the Project will primarily be felt during Project construction and include:

- Employment opportunities associated with the Project. These will primarily be felt in the Local and Project Regions.
- Business participation in the Project. This will primarily be a source of effects in the Local Region, as a result of negotiated contracts during construction, and, to a lesser extent, the City of Thompson.

- Pre-project and on-the-job training opportunities associated with the Project (construction phase). Again, this will primarily be a source of effect for the Local and Project Regions.

Resource harvesting and ownership participation effects, which are confined primarily to the Local Region, are addressed in Section 3.2.

3.4.2 Existing Environment

The Northern Region as a whole is considered because, according to preferences likely to be established for recruitment and hiring of workers during the construction phase, preference has been given to workers resident in an area defined as Northern Manitoba (see Section 3.1.1.1). Accordingly, the profile presented for communities in the Northern Region focuses on labour force characteristics. The whole of the Northern Region is included in this profile; communities in the Local Region and Project Region are not removed from this analysis. Further details on the economy of the Northern Region as a whole are found in [Appendix 1](#), Section 4.

Past experience has demonstrated that the role of Manitoba Hydro within the Northern Region is not fully captured by looking only at labour force, income and education/training needs. The Northern Manitoba Economic Development Commission (NMEDC) noted that development of northern hydroelectric resources has had a wide-ranging effect development of Northern Manitoba (December 1992). In contrast, however, the proposed Project is to be developed to a large extent within the context of the extensive hydroelectric infrastructure already developed to date.

3.4.2.1 Labour Force Characteristics

Employment, Participation and Unemployment Rates

[Table 3.33](#) below provides labour force characteristics for the Northern Region, as compared to the Province, based on 1996 Census data.²⁴ In general, service industries accounted for the greatest proportion of the employment in the North, while commodity industries and service industries were of equal importance throughout the whole of Manitoba. Collectively, however, primary industries and service industries had a higher share of the labour force in the North in 1996 (60 per cent) than in the rest of Manitoba

²⁴ The 2001 Census data have recently become available, and are being reviewed to confirm that a complete and consistent data set can be provided for all communities and regions under review in the SEIA. If feasible, the 2001 data may be added to Volume 8 at a later time.

(52 per cent). In particular, primary industries like mining, forestry, fishing and trapping were of high importance to the Northern economy relative to the rest of Manitoba (Statistics Canada 1996).

Table 3.33 Employment, Participation and Unemployment in the Northern Region and Province of Manitoba: 1996

Characteristics ^{1,2}	Northern Region	Manitoba
The potential labour force ³	55,110	855,880
The active labour force ⁴	33,505	567,825
• Employed ⁵	27,990	523,210
• Unemployed ⁶	5,510	44,615
Persons not in the labour force	21,610	288,055
Participation rate	60.8%	66.3%
Employment rate	83.5%	92.1%
Unemployment rate	16.5%	7.9%

Source: Statistics Canada, 1996 Census of Canada.

Notes:

- 1 - Data incomplete: 20 per cent sample data.
- 2 - Totals may not add due to rounding.
- 3 - Statistics Canada defines the potential labour force as all persons in a given population, excluding institutional residents, age 15 years and over.
- 4 - The active labour force includes all persons 15 years of age and over, excluding institutional residents, who, during the week (Sunday to Saturday) prior to Census Day were either employed or unemployed.
- 5 - The "employed" include all persons who "worked for pay or in self-employment" in the paid labour force in the week prior to enumeration. This includes all persons working for wages or salaries, all self-employed persons (with or without paid help) working in their own business, farm or professional practice, and all persons working without pay on a family farm or business during the reference week. The "employed" also include those persons absent from their job or business for the entire week because of vacation, illness, a labour dispute at their place of work or other reasons.
- 6 - The classification of unemployed does not account for the underemployed, or those individuals working part time but desiring a full time position. As well, the classification does not include discouraged workers: those individuals who wish to work but have ceased looking because they do not believe they will find a job. Unemployment numbers may be understated for these reasons.

Income Levels

Table 3.34 below provides income characteristics for the Northern Region, as compared to the Province, based on 1996 Census data. The average annual personal income for Northern Region residents was approximately 10 per cent less than the provincial personal average annual income. Average annual family and household incomes for the Northern Region were also considerably less than the corresponding provincial figures.

Table 3.34 Average Annual Income Levels for the Northern Region: 1996

Type of Income	Average Annual Income in 1996 (\$)	
	Northern Region	Manitoba
Income Per Person	19,952	22,667
Household Income	41,987	43,404
Family Income	40,369	50,263

Source: Statistics Canada, 1996 Census of Canada.

Education and Training

In 1996, 23 per cent of Northern Region residents 15 years of age or older had less than a Grade 9 education, which was almost 50 per cent higher than the provincial average of approximately 13 per cent (see Table 3.35). Levels of university education for Northern Region residents (14 per cent) were significantly lower than the provincial average of 23 per cent. Approximately 4 per cent of Northern Region residents had trades certificates or diplomas in 1996, which was about the same as the provincial figure (Statistics Canada 1996).

Table 3.35 Highest Level of Education among Northern Region Residents and Provincial Population: 1996

Level of Education ¹	Proportion of the Population	
	Northern Region ²	Manitoba ²
Less than Grade 9	23	13
Grades 9 to 12:	42	40
- Without Secondary School	34	29
- With Secondary School	8	11
Trades Certification or Diploma	4	3
Other Non-University Education Only	18	21
- Without Certificate Or Diploma	5	5
- With Certificate Or Diploma	13	16
University:	14	23
- Without Degree	8	12
- With Bachelor's Degree or Higher	6	12

Source: Statistics Canada 1996, Census of Canada.

Notes:

1 - Incomplete data: 20 per cent sample data.

2 - Totals may not add due to rounding.

3.4.3 Effects and Mitigation

In the Northern Region, economic effects of the Project will primarily be felt during the Project construction phase. Effects will mostly occur as a result of northern resident employment during Project construction, particularly northern Aboriginal residents. In addition to this, there will be some northern business participation in the construction phase through anticipated negotiated contracts with NCN and indirect business effects felt in Thompson. Fewer effects are anticipated during the operations phase of the Project and these will mostly be experienced in the Local Region.

3.4.3.1 During Construction

During construction, economic effects in the Northern Region will stem primarily from employment opportunities associated with the Project. Business effects will also be felt in the Local Region and, to a lesser extent, in Thompson. Effects will also occur as a result of Project-related training activities.

Employment Effects

The following presents possible employment levels throughout the Northern Region resulting from construction of the Project. Employment levels presented are a best possible estimate and actual levels may vary.

Employment effects in the Northern Region will be felt primarily by the Region's Aboriginal residents. This is primarily because Aboriginal residents in northern Manitoba (as defined in the current Burntwood-Nelson Agreement – see [Figure 2.3](#), Section 2.1.2.2) are likely to receive hiring preference. Among northern Aboriginal residents, those living within the region of first preference (assumed to be the Project Region, as defined by the Burntwood River and Nelson River areas), are expected to be the most affected (i.e., receive the greatest number of jobs).

[Table 3.36](#) below summarizes available employment opportunities and estimated employment that could potentially be expected from the Project construction for northern Manitoba Aboriginals. Further, [Table 3.37](#) shows how the peak position employment could translate to person-years of employment. Both [Table 3.36](#) and [Table 3.37](#) show estimates excluding and including the Project Region (i.e., the region of first hiring preference for Aboriginal residents). Estimated peak positions and person-years of employment consider the effect of pre-Project training initiatives.

Table 3.36 Estimated Maximum Peak Positions Employment for Northern Region Aboriginal Residents during Project Construction

Trade & Experience Group	Estimated Maximum Peak Positions Employment ¹		
	Total Number of Positions Available ²	(Excluding the Project Region) Estimated Positions Held by Northern Region Aboriginal Residents ³	(Including the Project Region) Total Estimated Positions Held by Northern Region Aboriginal Residents ³
Stage 1 (Years 1-2) Infrastructure Development⁴			
Trainees and Positions with 0 – 24 months experience ⁴	130	0 ⁶	130 ⁶
Construction Support & Non-designated Trades, 3 – 4 and >4 yrs. Experience	10	4	7
Designated Trades Positions	17	4	13
Stage 2 (Years 3-6) Major Works Construction Installation⁵			
Trainees and Positions with 0 – 24 months experience ⁴	265	0 ⁵	198-256 ⁵
Construction Support & Non-designated Trades, 3 – 4 and >4 yrs. Experience	124	8	18
Designated Trades Positions	385	16-34 ⁵	45-95 ⁵

Notes:

- 1 - This information represents an estimate only, based on current regulations, Project plans as of 2002, and past experience with similar projects. Contractors will determine specific job requirements when the Project is being built. Actual employment requirements will vary from the estimate presented above.
- 2 - The number of positions refers to the maximum during the stated construction stage. These positions will not be concurrent. Actual number of positions at a given time will be less than the estimated maximum. The positions identified are those potentially filled by job orders. Excludes Manitoba Hydro staff and contractor supervisory and management positions.
- 3 - Project Region is defined in Section 3.1.1.2, and includes communities defined by the Burntwood River and Nelson River areas.
- 4 - The effects of the assumed employment preference are observed in the positions for trainees and workers with 0 to 24 months combined training and experience as there are more workers in northern Manitoba available for these types of positions than are required for the construction workforce.
- 5 - For the major construction works, the high end of the range reflects the number of positions that could be taken by Aboriginal residents in the entire Northern Region, assuming the existing capacity of NCN members as well as full achievement of NCN training targets. The low end of the ranges represents that number of positions that could be secured assuming the existing capacity of NCN members and about 50 per cent of NCN pre-project training targets.
- 6 - All of the positions for trainees and workers with 0-24 months of training & experience could be taken up by Aboriginal residents in the Project Region alone (including those in the Local Region). There are enough Aboriginal residents with 0-24 months training & experience in this Region to fill the number of available positions for occupations where there are the relevant skills and interest in northern Manitoba (maximum combined peak of 130 positions during Stage 1, and 198-256 positions during Stage 2).

Table 3.37 Estimated Maximum Person-years Employment for Northern Region Aboriginal Residents during Project Construction

Trade & Experience Group	Estimated Maximum Person-years Employment ¹		
	Total Number of Person-years Available ²	(Excluding the Project Region) Estimated Person-years Secured by Northern Region Aboriginal Residents ³	(Including the Project Region) Total Estimated Person-years Secured by Northern Region Aboriginal Residents ³
Stage 1 (Years 1-2) Infrastructure Development⁴			
Trainees and Positions with 0 – 24 months experience ⁴	92.0	06	92.06
Construction Support & Non-designated Trades, 3 – 4 and >4 yrs. Experience	8.3	3.3	5.8
Designated Trades Positions	12.8	5.3	12.1
Total	113.2	8.6	109.9
Stage 2 (Years 3-6) Major Works Construction Installation⁵			
Trainees and Positions with 0 – 24 months experience ⁴	437.9	06	327.2-423.05
Construction Support & Non-designated Trades, 3 – 4 and >4 yrs. Experience	127.5	8.2	18.5
Designated Trades Positions	430.5	17.9-38.05	50.3-106.2 5
Total	995.9	26.1-46.2	396.0-547.8

Notes:

- 1 - This information represents an estimate only, based on current regulations, Project plans as of 2002, and past experience with similar projects. Contractors will determine specific job requirements when the Project is being built. Actual employment requirements will vary from the estimate presented above.
- 2 - The number of person-years refers to the total for the stated construction stage. The person-years of employment are for positions potentially filled by job orders. Excludes Manitoba Hydro staff and contractor supervisory and management positions.
- 3 - Project Region is defined in Section 3.1.1.2, and includes communities defined by the Burntwood River and Nelson River areas.
- 4 - The effects of the assumed employment preference are observed in the positions for trainees and workers with 0 to 24 months combined training and experience, as there are more workers in northern Manitoba available for these types of positions than are required for the construction workforce.
- 5 - For the major construction works, the high end of the range reflects the number of positions that could be taken by Aboriginal residents in the entire Northern Region, assuming the existing capacity of NCN members as well as full achievement of NCN training targets. The low end of the ranges represents that number of positions that could be secured assuming the existing capacity of NCN members and about 50 per cent of NCN pre-project training targets.
- 6 - All of the positions for trainees and workers with 0-24 months of training & experience could be taken up by Aboriginal residents in the Project Region alone (including those in the Local Region). There are enough Aboriginal residents with 0-24 months training & experience in this Region to fill the number of available positions for occupations where there are the relevant skills and interest in northern Manitoba (maximum of 92.0 person-years during Stage 1 and 327.2-423.0 person-years during Stage 2).

Based on [Table 3.36](#) above, it is estimated that Aboriginal residents in northern Manitoba could secure 96 per cent of peak positions (about 150 peak positions) during the first stage of construction. This equates to 97 per cent of the available person-years employment (109.9 person-years) during the first stage of construction (see [Table 3.37](#)). If the extent and quality of pre-Project training differ from that expected these numbers could be lower. The estimates shown in both [Table 3.36](#) and [Table 3.37](#) are not affected by the assumed hiring preference, because the majority of the work during this stage is expected to be completed through negotiated contracts with NCN business(es).

The majority of the Stage 1 jobs expected to be secured by northern Aboriginal residents will be held by Aboriginal residents in the Project Region. Further, depending on the outcome of pre-Project training activities in the Local Region, a large majority of these Stage 1 jobs could go to NCN members. This is primarily due to the anticipated negotiated contracts with NCN businesses during this first stage of construction (expected to constitute the majority of work during Stage 1). Under Article 2.9 of the existing Burntwood-Nelson Agreement (BNA) (the BNA is currently being renegotiated), northern Aboriginal contractors with negotiated contracts are able to directly hire northern Aboriginal residents without having to go through the job order process to which the northern employment preference applies. It is anticipated that NCN contractors engaged in negotiated contracts would show preference in hiring qualified NCN members.

During the second stage of construction, it is anticipated that Northern Region Aboriginal residents could secure between 34 and 48 per cent of peak positions (or 261 to 369 peak positions). This equates to between 40 and 55 per cent of the available person-years of employment (396.0 to 547.8 person-years) during this stage. (The range indicates uncertain effects from pre-Project training activities throughout the Northern Region.) During this second stage of construction, Project participation by northern Aboriginal residents will be heavily influenced by employment preference policy and pre-Project training activities.

Employment preference, as it is assumed in this analysis, will improve the ability of Aboriginal residents in the Project Region to obtain Project construction employment. In particular, employment preference policy will affect the number of positions held by Project Region Aboriginals that are trainee positions in the non-designated and construction support trades and those that require zero to 24 months of combined training and experience. Overall, there are more Aboriginal workers available in the first preference region and in northern Manitoba, as a whole, than are required for these

positions. As such, it is expected that the majority of available positions in these areas will be held by Aboriginal residents in the region assumed for first preference – i.e., very few, if any, of these positions will be held by Northern Region residents outside of the Project Region.

For skilled positions in the workforce (which dominate the required workforce during Stage 2), there is a shortage of qualified northern Aboriginal workers in the designated trades and experienced non-designated trades (i.e., 3 to 4 years of combined training and work experience). This means that employment in these positions, for Aboriginal residents throughout the north, is only minimally influenced by employment preference. Instead, the supply of qualified candidates will act as the limiting factor for northern Aboriginal employment.

For non-Aboriginal residents living in the Northern Region, Project construction is expected to have more limited employment effects. Non-Aboriginal residents living in the Region will be covered by the third level of employment preference, assuming the current preference scenario. It is likely that those non-Aboriginal northern residents who do find employment on the Project will primarily be employed during Stage 2 in highly skilled positions (i.e., when there is a high demand for skilled workers and fewer qualified northern Aboriginals to fill the available positions).

Employment effects for non-Aboriginal northern residents are also likely to be limited by interest in Project employment. Unemployment rates among non-Aboriginal residents in the North are relatively low, especially when compared to those seen among the Region's Aboriginal communities. As well, key person interviews in Thompson suggest that non-Aboriginal residents who do become unemployed are more likely to relocate elsewhere to find employment. For these reasons, it is predicted that fewer non-Aboriginal residents in the North will be attracted to work on the Project, particularly given the seasonal and short-term nature of the work.

Previous experience (most notably on the construction of the Limestone Generating Station) indicates that the availability of appropriate retention support services will be important to retaining Aboriginal employees at the Wuskwatim construction site. On-site retention support services for all Aboriginal employees working on the construction project will be provided as part of the broader retention strategy being developed by NCN and Manitoba Hydro.

Construction employment on the Project will generate new employment for the Northern Region, particularly among Aboriginal residents in the Project Region. It is likely that most of this Project-related employment will go to Aboriginal residents who currently work on a seasonal, on-call or part-time basis or are unemployed. For these individuals, Wuskwatim construction employment also has the potential to lead to an increase in income (as a result of both higher wages and more working hours). This, in turn, has the ability to affect quality of life and social well-being, generate spin-off effects for local businesses and increase federal government revenues (through tax revenues and reduced social assistance – see Section 3.3). Project employment will also assist in building longer-term capacity among Northern Region residents to participate in the northern wage economy.

Business Effects

During construction of the Project, business effects in the Northern Region will be limited to the Local Region and the City of Thompson.

In the Local Region, effects will stem primarily from anticipated negotiated contracts with NCN during Stage 1 (for various infrastructure construction contracts) and, to a lesser extent, Stage 2. The contracts to be negotiated and their economic value are not yet known. It is also likely that some residents in the Local Region will take on entrepreneurial opportunities associated with the construction project (e.g., convenience store at the worksite). (Further details on these Local Region effects are provided in Section 3.2.3).

Outside of the Local Region, no construction contracts are expected to be designated for negotiated contracting under Manitoba Hydro's Northern Purchasing Policy. As a result, it is expected that there will be very limited participation by other Northern businesses during Project construction. Similarly, it is expected that residents in the Local Region (primarily in Nelson House) will take up the limited range of entrepreneurial opportunities that are likely to be associated with the construction projects (e.g., convenience store at the site). It is possible, however, that some of these opportunities may be taken up by Thompson residents, given the proximity of this community to the construction site.

In the City of Thompson, business effects will occur primarily as a result of indirect Project expenditures. Most notably, businesses that provide services to workers (e.g., restaurants, recreational facilities, hotels) and retail businesses are likely to benefit from

the re-spending of construction worker wages. Some commercial and industrial supply services may also benefit from support to construction contractors (e.g., small engine repair shops, heavy duty equipment repair, hardware suppliers) and possibly supply of bulk fuels to the Project. Services supporting the movement of workers and contractors to and from the Wuskwatim construction site will also benefit (i.e., air and ground transportation). These indirect increases in demands for goods and services may worsen the current shortage of entry-level labour in Thompson.

Training Effects

In the Northern Region, training effects of the Project will stem from both pre-Project and on-the-job training opportunities during construction and will be the most noticeable in the Local Region (where three-quarters of available training monies are expected to be allocated). Additionally, training effects throughout the Northern Region will almost wholly be felt by its Aboriginal residents for two reasons:

- Pre-project training funds provided by Manitoba Hydro and the governments of Manitoba and Canada specifically for this Project and the Gull/Keeyask Generating Station project are being assigned solely for northern Aboriginal residents.
- Trainee positions, for which on-the-job training is provided, will likely go to northern Aboriginal residents, primarily within the region assumed for first preference.

Within the Northern Region, pre-Project training programs for Aboriginal residents will be designed and delivered by NCN in the Local Region and, most likely, by Manitoba Advanced Education and Training (AET) throughout the rest of the North.

In the Local Region, NCN is developing training and work experience programs in various Wuskwatim-related trades (non-designated, construction support and designated trades). NCN's goal is to train a maximum of 194 Aboriginal residents in the Local Region, with an estimated 172 trainees (or 82 per cent) completing their full training program. This is an ambitious target and actual rates of attrition may be higher than the projected 11 per cent. In conjunction with these training programs, NCN is also developing a number of retention support measures. Further details on Local Region training are available in Section 3.2.3.1.

Outside of the Local Region, northern Aboriginal residents who are interested in Wuskwatim training programs can approach AET for assistance. AET will provide assessment and career counseling services, and facilitate access to literacy training and

academic upgrading, where required. AET will also help eligible individuals find and access relevant technical training programs related to construction positions on the Project. The number of northern Aboriginal residents who participate in this training is difficult to estimate.

For those who do participate in pre-project training activities, both in the Local Region and throughout the North, the skills and experience gained will improve their ability to participate in Project construction. This is particularly true for those who achieve higher levels of training and experience, qualifying them for more skilled positions during Project construction. (Achieving a higher level of skill will be especially important for northern Aboriginal residents interested in securing Project employment, but living in communities outside of the region of first preference.) Over the long term, it is also possible that the skills and experience gained through Wuskwatim-related training may help Northern Aboriginals secure jobs during the construction of other northern hydroelectric developments. Trades training received as a result of the Project can also be used in other areas (e.g., forestry and mining) and may help Northern Aboriginal residents to participate in the northern economy. Ultimately, the magnitude of these effects will vary, depending on the number of people who successfully complete training programs.

3.4.3.2 During Operations

During the operations phase of the Project, economic effects in the Northern Region will largely be felt in the Local Region.

In the Local Region, NCN is expected to benefit significantly from the revenue stream associated with their investment in the Project (See Section 3.2.3.2 for assessment of effects).

Only a very small number of employees will be required during the operations phase, (normally from two to six employees, including three or four technicians and two utility workers). Maintenance contracts for the Project buildings and infrastructure could provide a source of direct small-scale, long-term employment opportunities.

3.4.4 Cumulative Effects

In the Northern Region, future projects and activities which could potentially have effects that overlap with those of the Project are limited primarily to the Local and Project

Regions.²⁵ For the most part, these future projects and activities provide additional employment opportunities and include:

- The Wuskwatim Transmission Project which, if approved, will start construction concurrently with the construction phase for the Project.
- The Gull/Keeyask Generating Station, with a potential construction start of 2007.
- The Conawapa Project, which has an earliest possible construction start of 2006.
- The Notigi Project, which is likely to start construction after 2009, near the end of the Project construction phase and into the Project operations phase.
- Bipole III, with a potential construction start of 2006.

The Wuskwatim Transmission Project, if approved, will start construction concurrent with the construction phase for the Project (i.e., in late 2003). The Transmission Project will offer limited seasonal employment (about 25 to 30 winter season jobs in any given year) and business opportunities for residents in the Project Region, most of which will be in the Local Region (where the majority of the transmission facilities are located). In the Project Region, it is also likely that Thompson businesses that provide services to construction workers (e.g., hotels, restaurants, bars, recreation facilities) may experience some additional benefit as workers constructing the proposed Birchtree Station (just south of Thompson) are likely to stay in the community.

One of the transmission lines associated with the Wuskwatim Transmission Project is located outside of the Project Region and runs from Herblet Lake Station in Snow Lake to Rall's Island Station in The Pas. Construction of this line may provide limited employment opportunities (about 25 to 30 winter season jobs in any given year) for northern Aboriginal residents outside of the Project Region.

The timing of construction for the Gull/Keeyask Generating Station (currently protected to start 6 to 7 years of construction in 2007) and, possibly, the Conawapa Project (earliest possible construction start of 2006, for a first power in-service date of 2015) partially overlaps with construction of the Project and partially occurs after Project construction is complete. Either of these projects, if developed, is much larger in scale than the proposed Project (with estimated peak workforce requirements of 1,200 to 1,500 for the Gull/Keeyask Generating Station and 1,800 workers for the Conawapa Project) and has

²⁵ Section 2.2.7 provides full details on the approach and methodology for assessing cumulative effects and the future projects and activities included as part of the cumulative effects assessment for this SEIA.

the potential to generate substantial amounts of additional construction employment for Northern Region residents.

If developed, the Notigi Project, which at the earliest would start construction after 2009, also has the potential to provide additional employment opportunities for Northern Region residents, primarily in the Local Region.

The Bipole III project, as currently planned, also partially overlaps with construction of the Project. The Bipole III project may provide some additional job opportunities for residents in the Project Region. Limited employment opportunities may also be available to other northern Aboriginal residents, primarily in communities located on the east side of Lake Winnipeg, where the transmission line will be located. As with the Wuskwatim Transmission Project, employment opportunities associated with the construction of Bipole III are very limited and will be seasonal in nature, occurring primarily in the winter months.

The Kelsey Upgrade (maintenance program), expected to take place over the next five to eight years, also partially overlaps with the Project. The Kelsey Upgrade could provide some additional, albeit limited and highly skilled, employment opportunities for Northern Region residents.

3.4.5 Residual Effects and Significance

This section presents the estimated residual effects of the Project to economy in the Northern Region. Residual effects incorporate, to the extent possible, cumulative effects noted in Section 3.4.4 and consider the effect of impact management measures (both mitigation and enhancement measures) that are planned. Based on criteria outlined in Section 2.2.8, the significance of these effects for the Region as a whole is assessed, along with the general direction of change (positive, negative or elements of both).

Outside of the Local and Project Regions (which are discussed in Sections 3.2 and 3.3, respectively), economic effects in the Northern Region will only be experienced in the area of employment and are expected to be negligible.

During Stage 1 of construction, Northern Region Aboriginal residents are anticipated to secure up to 96 per cent of maximum peak positions. Of these, 95 per cent are expected to be held by residents of the Project Region. Similarly, during the second stage of construction, Northern Region Aboriginal residents are anticipated to secure between 34

and 48 per cent of peak positions. Of these, between 88 and 90 per cent are expected to be held by residents of the Project Region.

Non-Aboriginal residents in the Northern Region are expected to experience very limited employment effects (as a result of the Project's hiring preference policy and the relatively low unemployment rates in this population).

3.4.6 Monitoring and Follow-up

Monitoring and follow-up measures in the Northern Region (including the Local and Project Regions) for Aboriginal employment will be undertaken.

Outcomes of pre-Project training (sponsored by HRDC, Manitoba Hydro and AET) will be tracked, including degree to which trainees obtain employment on the Project.

Business participation will also be monitored.

3.5 MANITOBA AND CANADA

3.5.1 Sources of Effects

Due to the size and scope of the Project, both Manitoba, including Manitoba Hydro, and Canada are expected to experience economic effects from the Project. These will include contributions to Gross Domestic Product (GDP) as a result of Project expenditures for products, services and labour, Project employment, revenues earned through income and sales taxes and revenues earned by Manitoba Hydro through the sale of hydroelectric power to export customers (this, in turn, will help keep electricity rates for domestic customers low relative to those charged in other jurisdictions). These economic effects are anticipated to occur in three distinctive phases: the 3 to 5 year planning phase, the 6 to 7 year construction phase, and the operations phase, which will last over 60 years. Due to the capital intensive nature of hydroelectric projects, much of the economic impact will be concentrated in the construction phase, which is projected to extend from late 2003 through 2009.

It is apparent that hydroelectric development in northern Manitoba in the past has had effects on the overall Manitoba economy that go far beyond the effects reflected in direct labour force numbers. The final Northern Manitoba Economic Development Commission report, for example, described a wide range of such effects, and estimated that hydroelectric power from northern Manitoba contributes slightly less than 1 per cent of

Manitoba's Gross Domestic Product (GDP), as well as significant contributions to Province of Manitoba revenues (through water rental rates, debt guarantee fees, and other levies or charges) (1992). Northern hydroelectric development has also been a key factor contributing to Manitoba Hydro's ability today to retain regulated domestic power rates within Manitoba that are low relative to those charged in other jurisdictions.

3.5.2 Existing Environment

The section provides an overview of current labour force characteristics in Manitoba and Canada. In part, assessing the economic effect of the Project on the provincial and federal economies requires an understanding of the current state of the labour force in these two regions. Also provided is an overview of Manitoba Hydro, including employment levels.

3.5.2.1 Labour Force Characteristics of Manitoba and Canada

Employment, Participation and Unemployment Rates

[Table 3.38](#) below provides labour force characteristics for Manitoba and Canada based on 1996 Census data.²⁶ Based on these data, employment rates were slightly higher in Manitoba than they were for the country as a whole in 1996 (92.1 per cent provincially versus 89.9 per cent federally). In both the province and Canada, employment was found primarily in manufacturing industries, retail trade industries and health and social services.

²⁶ The 2001 Census data have recently become available, and are being reviewed to confirm that a complete and consistent data set can be provided for all communities and regions under review in the SEIA. If feasible, the 2001 data may be added to Volume 8 at a later time.

Table 3.38 Employment, Participation and Unemployment in the Labour Force of Manitoba and Canada: 1996

Characteristics	Manitoba ^{1,2}	Canada ^{1,2}
The potential labour force ³	855,880	22,628,925
The active labour force ⁴	567,825	14,812,700
• Employed ⁵	523,210	13,318,740
• Unemployed ⁶	44,615	1,493,960
Persons not in the labour force	288,055	1,487,365
Participation rate	66.3%	65.5%
Employment rate	92.1%	89.9%
Unemployment rate	7.9%	10.1%

Source: Statistics Canada, 1996 Census of Canada.

Notes:

- 1 - Data incomplete: 20 per cent sample data.
- 2 - Totals may not add due to rounding.
- 3 - Statistics Canada defines the potential labour force as all persons in a given population, excluding institutional residents, age 15 years and over.
- 4 - The active labour force includes all persons 15 years of age and over, excluding institutional residents, who, during the week (Sunday to Saturday) prior to Census Day were either employed or unemployed.
- 5 - The "employed" include all persons who "worked for pay or in self-employment" in the paid labour force in the week prior to enumeration. This includes all persons working for wages or salaries, all self-employed persons (with or without paid help) working in their own business, farm or professional practice, and all persons working without pay on a family farm or business during the reference week. The "employed" also include those persons absent from their job or business for the entire week because of vacation, illness, a labour dispute at their place of work or other reasons.
- 6 - The classification of unemployed does not account for the underemployed, or those individuals working part time but desiring a full time position. As well, the classification does not include discouraged workers: those individuals who wish to work but have ceased looking because they do not believe they will find a job. Unemployment numbers may be understated for these reasons.

Income Levels

Table 3.39 below provides income characteristics for Manitoba and Canada based on the 1996 Census of Canada. In general, average incomes were slightly lower in Manitoba than for Canada as a whole.

Table 3.39 Average Annual Income Levels for Manitoba and Canada: 1996

Type of Income	Average Annual Income in 1996 (\$)	
	Manitoba	Canada
Income Per Person	22,667	25,196
Household Income	43,404	48,552
Family Income	50,263	54,583

Source: Statistics Canada, 1996 Census of Canada.

Education and Training

Table 3.40 below highlights the highest levels of education for the Manitoban and Canadian populations based on 1996 Census of Canada data. The data indicate that, in general, the Canadian population has slightly higher levels of education than the provincial population.

Table 3.40 Highest Level of Education For Manitoba and Canada: 1996

Level of Education	Proportion of the Population (%)	
	Manitoba (Total = 855,880)	Canada (Total = 22,628,925)
Less than Grade 9	13	12
Grades 9 to 12:	40	37
- Without Secondary School Graduation Certificate	29	23
- With Secondary School Graduation Certificate	11	14
Trades Certification or Diploma	3	4
Other Non-University Education Only	21	24
- Without Certificate Or Diploma	5	7
- With Certificate Or Diploma	16	18
University:	23	23
- Without Degree	12	10
- With Bachelor's Degree or Higher	12	13

Source: Statistics Canada, 1996 Census of Canada.

Notes:

- 1 - Incomplete data: 20 per cent sample data.
- 2 - Totals may not add due to rounding.

3.5.2.2 Overview of Manitoba Hydro

Manitoba Hydro, a Crown Corporation owned by the Province of Manitoba, is a major energy utility headquartered in Winnipeg, Manitoba. The corporation's capital assets in service exceed \$10 billion, making it the fourth largest energy utility in Canada.

In addition to serving more than 500,000 electricity and 250,000 gas customers in the province, Manitoba Hydro currently has 11 formal long-term export trade agreements with seven electric utilities and numerous short-term agreements with more than 40 electric utilities and marketers in Ontario, Saskatchewan and the Midwestern United States.

Virtually all of Manitoba Hydro's energy is produced from 14 hydroelectric generating stations. Hydroelectric stations are located on the Nelson, Winnipeg, Saskatchewan and Laurie Rivers and, combined, have the capability of approximately 5,000 megawatts of hydroelectric power. Manitoba Hydro's hydroelectric generating stations on the lower Nelson River in northern Manitoba generate almost 80 per cent of the utility's total energy production, with the three largest stations (Kettle, Long Spruce and Limestone) accounting for more than 70 per cent of the annual total. On an annual basis, Manitoba Hydro pays water rental costs to the provincial government for use of the water resources needed for hydroelectric generation. In the most recent fiscal year (2001-2002), the utility paid \$107 million in water rentals to the provincial government, or \$3.34 per megawatt-hour of hydroelectricity generated.

The low cost of producing hydroelectric power (compared to other forms of electricity production) combined with export revenues have allowed Manitoba Hydro to keep their average retail electricity rates among the lowest of any major utility in North America. As of 2002-2003, electricity rates for residential customers in Manitoba had remained unchanged for seven years and those for industrial customers had remained unchanged for 12 years.

Manitoba Hydro employs more than 5,400 people throughout the province. Approximately 540 employees are located in northern Manitoba, where the majority of the utility's hydroelectric energy is produced.

3.5.3 Effects and Mitigation

This following summarizes the provincial and national economic effects of the Project. Estimates of the Project's contribution to Gross Domestic Product, Project employment

and labour income and government revenues are presented for the six year construction phase that begins in late 2003. Similar estimates, including Manitoba Hydro revenues, are also provided for a typical operations phase year, which would begin in 2009. The information presented is largely 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 (see [Appendix 4](#)).²⁷

3.5.3.1 Construction Phase

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. The Project will constitute the largest construction project undertaken in Manitoba since the Limestone Generating Station was built between 1985 and 1992. Its construction will make a noticeable contribution to Manitoba's economy and be a prominent source of provincial economic growth.

The Project's estimated \$488 million of construction expenditures (\$2002 without interest and escalation) will generate the following provincial and national economic effects (in \$2002):

- Gross Domestic Product (GDP): Spending on products, services and labour will contribute over \$500 million to Canada's Gross Domestic Product (GDP) from 2004 to 2010. Approximately 54 per cent of this amount, or nearly \$275 million, will accrue in Manitoba, with the remaining \$230 million accruing in the Rest of Canada.
- Project Employment and Labour Income: Construction of the Project will generate almost 7,700 person years of direct and indirect employment, and approximately \$360 million of labour income. This includes on-site construction jobs in northern Manitoba (1,663 person years), off-site manufacturing, fabricating and transportation jobs in southern Manitoba and the Rest of Canada and retail and service jobs resulting from expenditure of wages and salaries by project workers. The largest share of the jobs and labour income will be in Manitoba, with nearly 4,150 person-years of employment (54 per cent). The Rest of Canada will benefit from 3,530 person-years of added employment, principally in the manufacturing and fabricating sectors.

²⁷ Manitoba Hydro. *Wuskwatim Construction and Operations: Economic Impact Assessment*. Winnipeg, Manitoba. September 2002.

- 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 \$72 million, nearly \$50 million of which will flow to the Government of Manitoba. Local governments will receive an additional \$9.2 million, with \$3.2 million flowing to local governments in Manitoba. Over \$65 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.

3.5.3.2 During Operations

The Project Generating Station has a design life of at least sixty 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 just over \$600,000, excluding water rentals. Water rentals paid by Manitoba Hydro to the provincial government are estimated to be in excess of \$5.1 million annually, raising the typical year expenditures to over \$5.7 million (\$2002). These expenditures will generate the following annual economic effects (in \$2002) when the project is operating in a typical manner.

- Gross Domestic Product (GDP): Operation of the Project will generate an estimated \$0.66 million of Gross Domestic Product in Manitoba in a typical year excluding water rentals, and just over \$190,000 in the rest of Canada. The contribution to GDP rises to \$5.7 million when water rentals are included.
- Project Employment and Labour Income: Few people are required to operate and maintain a modern hydroelectric generating station. About thirteen person-years of employment will be generated in a typical year of Wuskwatim generating station operation, ten of which will occur in Manitoba and three of which will occur in the Rest of Canada. Labour income will amount to \$540,000 in Manitoba and \$90,000 in the Rest of Canada
- Government Revenues: Government revenues will largely be concentrated in Manitoba where the provincial government will receive almost \$5.2 million each year, comprised largely of water rentals. Federal revenues will be about \$125,000 annually.

For Manitoba Hydro, export revenues made possible with the Generation Project would contribute significantly to its financial performance. Financial evaluations indicate that within about five years following the start of operations, the Project will produce positive returns (even under pessimistic export price scenarios), and within 15 to 25 years, returns to Manitoba Hydro would increase to over \$50 million annually. Traditionally, revenues earned through export power sales have increased Manitoba Hydro's ability to retain regulated domestic power rates within Manitoba that are low relative to those charged in other jurisdictions.

In addition to beneficial economic effects for Manitobans and Canadians, the Project will also contribute to federal and provincial objectives related to greenhouse gas reductions. Non-polluting electrical power will offset thermal emissions in the markets where the power is being consumed. In the absence of hydroelectric imports, the utilities buying the power would generally have to resort to coal- or gas-based electricity generation. Not having to use fossil fuel based generation also produces other improvements in air quality (sulfur dioxide, nitrogen dioxide, particulates, mercury, etc.), as well as advantages of reliability and diversity of supply.

3.5.4 Cumulative Effects

In terms of cumulative effects, the Provincial and Federal Governments would see additional economic benefits from development of another hydroelectric project in northern Manitoba.²⁸ In this regard, the most notable would be approval and construction of either the Gull/Keeyask Generating Station or the Conawapa Project.

The timing of construction for the Gull/Keeyask Generating Station (currently projected to start 6 to 7 years of construction in 2007) and, possibly, the Conawapa Project (earliest possible construction start of 2006, for a first power in-service date of 2015) partially overlaps with construction of the Project and partially occurs after Project construction is complete. Either of these projects, if developed, is much larger in scale than the proposed Project: estimated peak workforce requirements are more than double those for the Project, with 1,200 to 1,500 workers estimated at peak for the Gull/Keeyask Generating Station and 1,800 workers estimated at peak for the Conawapa Project. As such, both of these projects have the potential to generate substantial provincial and national economic effects (perhaps even double those of the Project) through contributions to Gross

²⁸ Section 2.2.7 provides full details on the approach and methodology for assessing cumulative effects and the future projects and activities included as part of the cumulative effects assessment for this SEIA.

Domestic Product, project employment and revenues earned through income and sales taxes.

To a much lesser extent, the Wuskwatim Transmission Project and the proposed Notigi and Bipole III projects would also generate positive economic effects for the provincial and national economies that could overlap with Project effects.

3.5.5 Residual Effects and Significance

This section presents the estimated residual effects of the Project to the economies of Manitoba and Canada. To the extent possible, residual effects incorporate the cumulative effects noted in Section 3.5.4. Based on criteria outlined in Section 2.2.8, the significance of these effects for the community as a whole is assessed, along with the general direction of change (positive, negative or elements of both).

During Project construction, Manitoba and Canada will experience moderate economic benefits. These include (constant 2002 dollars):

- Contributions of over \$500 million to Canada's Gross Domestic Product (GDP), of which nearly \$275 million will accrue in Manitoba, with the remaining \$230 million accruing in the Rest of Canada.
- Generation of almost 7,700 person years of direct and indirect employment, and approximately \$360 million of labour income.
- Generation of sales, income and property tax revenues for Federal, Provincial and local governments of approximately \$146 million.

The significance of these effects could increase cumulatively if other hydroelectric developments are approved and start construction before 2009.

During Project operations, economic effects experienced at the provincial and national levels will be minor. Effects will primarily be felt at the provincial level as a result of the \$5.7 million paid annually in water rentals.

For Manitoba Hydro, the Wuskwatim Generation Project represents a significant positive addition to its financial position and to the reliability of power supply

3.5.6 Monitoring and Follow-up

No monitoring and follow-up measures are required.

4.0 INFRASTRUCTURE AND SERVICES

This section addresses the socio-economic component of the environment set out as follows in Section 6.4.3 Infrastructure and Services of the EIS Guidelines:

- “a general description of the infrastructure and services of Aboriginal and other related communities affected by the project shall be provided in sufficient detail to predict the effect of the project on infrastructure and services of Aboriginal and other affected communities.”

Infrastructure and services available to people living in Northern Manitoba, and elsewhere in the province, are critical to meeting a wide range of human needs. They include provision for housing, public infrastructure (to provide potable water and waste handling, roads, electricity and other needs) and public facilities to provide education, health care, recreation, social services and other government services. In many Northern communities, and particularly in its First Nation communities, providing the infrastructure and services noted is often hampered by limited financial resources coupled with, in many cases, rapid population growth. This is particularly the case for housing. Although provision of adequate housing for residents is usually a priority, and has been recognized as important to human health and social well-being, in northern First Nation and some Northern Affairs communities (where housing is typically supplied to residents) demand frequently exceeds the available supply of quality homes. As a result, many community residents and families live in crowded conditions, and there is limited capacity to accept new residents into the community.

Providing public facilities, infrastructure and services, and in some cases, housing, for community residents involves governments and draws on public funds, to varying degrees, at the local, provincial and national levels. In planning for future demands in this area, communities usually consider as a key input projections of future population by age and other demographic characteristics. Factors affecting population growth or decline are births, deaths and migration. Of these, migration is hardest to predict because adults and their families migrate from one community to another for many reasons, including a search for job and business opportunities, better housing conditions, education, personal and other reasons.

The Project has the potential to affect in-migration to the Local Region (primarily to the Nelson House reserve community) and, to a much lesser extent, the Project Region

(primarily to the City of Thompson), as a result of the draw of training and construction phase employment and business opportunities. This new population, and particularly those with limited financial resources, will generate additional demand for housing, facilities and services and, depending on current capacity, could have implications for public finances.

In the Local Region, a second potential source of change to infrastructure and services related to the Project is the revenue stream that would eventually accompany an investment by NCN in the Project. Depending upon community priorities, improvements to local infrastructure and services could result.

This section reviews effects of the Project on infrastructure and services and includes the following major subsections:

- Approach and Methodology
- Local Region
- Project Region.

In discussion of the Local and Project Regions, the focus is primarily on the population and infrastructure and services in the reserve community of Nelson House (Local Region) and the City of Thompson (Project Region). These communities, and particularly Nelson House, are likely to experience the majority of Project-related migration and associated effects on infrastructure and services as a result of:

- Their proximity to the Project site
- The likelihood of negotiated contracts with NCN during the first stage of construction (which will allow NCN contractors to directly hire qualified workers - see Section 3.2.3.1), and
- The availability of pre-Project training for NCN members, and others where capacity permits, in Nelson House.

There is a small possibility of effects on other Aboriginal communities in the Project Region (outside of the Local Region), as a result of the Project's possible hiring preference policies and associated Northern residency requirements (the BNA is currently being renegotiated; however, based on the current BNA, a likely requirement is a total of at least five years of residency in Northern Manitoba and six months Northern residency

immediately prior to hire). For this reason, a brief discussion of population, infrastructure and services in these communities is also provided.

4.1 APPROACH AND METHODOLOGY

Effects on infrastructure and services are likely to occur primarily during the construction phase, when the availability of economic opportunities is most likely to draw population, particularly to Nelson House in the Local Region and, to a lesser degree, to Thompson in the Project Region. As noted, there is also a slight possibility of population effects in other Project Region Aboriginal communities (outside of the Local Region).

Assessment of effects on infrastructure and services consists of two primary steps:

1. Estimating population change (primarily in-migration, and potentially some out-migration as well) in communities in the Local Region and Project Region (primarily in the City of Thompson)
2. Examining the implications of providing services for new population. Each is discussed below.

Uncertainties associated with the analysis pertain primarily to the difficulty in estimating migration behaviour. The decision by an individual and/or family to move involves an array of factors, of which economic opportunities are one element. Therefore, as noted in this section, effective monitoring and a coordinated service group ready to respond with impact management plans to a range of possibilities are considered to be prudent.

4.1.1 Estimating Population Change

Population change as a result of the Project was estimated for Local Region (primarily the reserve community of Nelson House) and Project Region (primarily Thompson) communities based on examination of the following:

- Factors that are likely to draw people to the Local and Project Regions. These include: availability of community-based training in Nelson House; residency requirements for possible preferential employment policies; location relative to the Wuskwatim construction site; extent of negotiated contracts going to Nelson House businesses (i.e., interest in being near firm when hiring).
- Factors that may deter migration to the Local and Project Regions. These include: lack of available or affordable housing; lack of services; age of potential migrants

- (tend to be younger); gender (probably fewer women); current employment status (full time or part-time work vs. seasonal construction jobs).
- Results of NCN Opinion Surveys in South Indian Lake, Winnipeg and Thompson (2001), which provided information on intentions to migrate, reasons for same, and, in the case of Winnipeg and Thompson members, original reasons for moving away from the NCN communities of Nelson House and/or South Indian Lake. Results of an earlier opinion survey in Nelson House (2000) also provided an idea about the potential for family members to return to the community. All of the surveys provided data on personal (age, employment) and family characteristics (number and age of children, marital status) of NCN members living in each of these locations.
 - In Nelson House, the potential for reduced out-migration (although difficult to estimate) as a result of increased optimism about economic opportunities available locally.
 - In Nelson House, the potential for out-migration (although difficult to estimate) when workers earn enough income to afford a move (e.g., to Thompson) for housing or other reasons.

Through consideration of the above, probable minimum and maximum scenarios of in-migrating population (workers, average of 2.5 to 3.5 additional family members; typically young families with pre-school or grade school age children) were developed for the Nelson House reserve community and the City of Thompson.

4.1.2 Examining Implications of Providing Services for New Population

The capacity of Nelson House and Thompson to accommodate new population – housing, education facilities and services; day care; health facilities and services; recreation facilities and services; emergency services (police and fire) - was examined based on:

- The range of possible in-migration
- The anticipated demographic profile of in-migrants (workers, average of 2.5 additional family members; typically young families with pre-school or grade school age children), and
- Known capacity concerns (identified through print sources and key person interviews in Nelson House and Thompson and described as part of the Existing Environment).

In Thompson, the potential for new demand for services created by workers at the construction site (up to about 540 at peak) was also examined for the six-year construction period.

4.2 LOCAL REGION

4.2.1 Sources of Effect

In the Local Region, sources of effects from the Project on population change relate primarily to the lure of a large number of well-paying construction jobs over a six-year construction period. Available community-based training opportunities at Nelson House, hiring by some Nelson House-based contractors (as a result of negotiated contracts during Stage 1 of construction), residency requirements likely to be associated with the assumed employment preference (assumed to be a total of at least five years of residency in Northern Manitoba and six months Northern residency immediately prior to hire) and a general sense of optimism about associated indirect opportunities would tend to draw NCN members who currently live in Thompson, Winnipeg, South Indian Lake²⁹ and other locations back to the community and encourage those already there to stay.

Additionally, it is possible that some Project workers and their families may use the additional employment income to migrate away from Nelson House (e.g., to Thompson) for housing or other reasons. This, however, is difficult to estimate.

4.2.2 Existing Environment

NCN currently provides housing, infrastructure, facilities and services to members living on-reserve at Nelson House. Some services are also provided to NCN members living off-reserve on Crown land (primarily in the Northern Affairs communities of South Indian Lake and Nelson House) and, to a much lesser degree, in other locations (Thompson, Winnipeg, Brandon and others). Also in the Local Region, the Northern Affairs communities of South Indian Lake and Nelson House, with elected Mayors and Councils, provide a range of services to their resident populations. Because any in-migration is expected to occur primarily to the Nelson House reserve community, for the most part this section focuses on the current and projected future status of population, housing, infrastructure, facilities and services in this community. The task of providing facilities and services to the NCN population on-reserve is a challenge for the First

²⁹ Results of the NCN Opinion Survey in South Indian Lake indicated that residents of this community are more likely to move to Thompson than to Nelson House. However, recent (2003) informal discussions with the NCN Housing Authority and community leadership suggest that South Indian Lake members have started to move back to Nelson House in anticipation of the Project.

Nation government because the population is young and growing rapidly, with corresponding rapid growth in needs for housing and other services.

The following sections characterize the current and projected future NCN population on-reserve, on Crown land (primarily in the Northern Affairs communities of South Indian Lake and Nelson House) and off-reserve, the First Nation's available land base and facilities, infrastructure and services provided to on-reserve members. Also examined are the population and services of the small Northern Affairs community of Nelson House, which lies adjacent to the reserve community. Further information can be found in [Appendix 1](#), Sections 2.1 and 2.3.

4.2.2.1 Current and Projected NCN Population

This section presents characteristics of the current NCN population as well as projected growth in population to 2011. Understanding current and potential future population is important to realizing the incremental effect that in-migration associated with future developments, like the Project, may have on the community.

Population data for total NCN membership were available from Indian and Northern Affairs Canada (INAC) and from Health Canada's First Nations and Inuit Health Branch (FNIHB) for the eleven-year time period from 1990 to 2000. Both sources have been cited because differences in collection methods can lead to differences in the populations reported for First Nation communities; actual population levels are expected to be somewhere within the range shown.³⁰

[Table 4.1](#) below indicates total NCN membership living on-reserve and on Crown land (primarily in the Northern Affairs communities of South Indian Lake and Nelson House) versus those living off-reserve (in Thompson, Winnipeg, Brandon, and other locations) for the period from 1990 to 2000, based on INAC and FNIHB data. In 2000, INAC data indicate that approximately 2,258 members lived on-reserve at Nelson House and 1,083 members lived on Crown land in the Northern Affairs communities of South Indian Lake (approximately 1,000 members) and Nelson House (approximately 80 members) ([see Figure 4.1](#)).

[Figure 4.1](#) depicts visually the changes that have occurred in on-reserve, off-reserve and Crown land populations of NCN members between 1990 and 2000 based on INAC

³⁰ The 2001 Census data have recently become available, and are being reviewed to confirm that a complete and consistent data set can be provided for all communities and regions under review in the SEIA. If feasible, the 2001 data may be added to Volume 8 at a later time.

data.³¹ The figure illustrates graphically how much the NCN population increased over this time period. Growth in NCN membership between 1990 and 2000 was between 4.2 per cent (FNIHB) and 4.3 per cent (INAC) annually. Based on INAC data, this equated to annual growth rates of 4.6 per cent for members on-reserve, 5.0 per cent for members on Crown land and 3.2 per cent for members off-reserve over this time period.

Table 4.1 NCN Members Living On-Reserve and on Crown Land Compared to Those Living Off-Reserve: 1990-2000

YEAR	INAC ¹		FNIHB ²	
	On-Reserve & On Crown Land	Off-Reserve	On-Reserve & On Crown Land	Off-Reserve
1990	2,110	849	2,018	824
1991	2,270	943	2,110	825
1992	2,377	992	2,298	930
1993	2,447	1,035	2,369	982
1994	2,797	868	2,484	1,021
1995	2,758	1,047	2,827	880
1996	2,956	1,036	2,915	985
1997	2,998	1,095	2,957	1,055
1998	3,079	1,127	3,063	1,071
1999	3,223	1,154	3,149	1,122
2000	3,341	1,158	3,279	1,098
Average Annual Growth Rate	4.7%	3.2%	5.0%	2.9%

Sources:

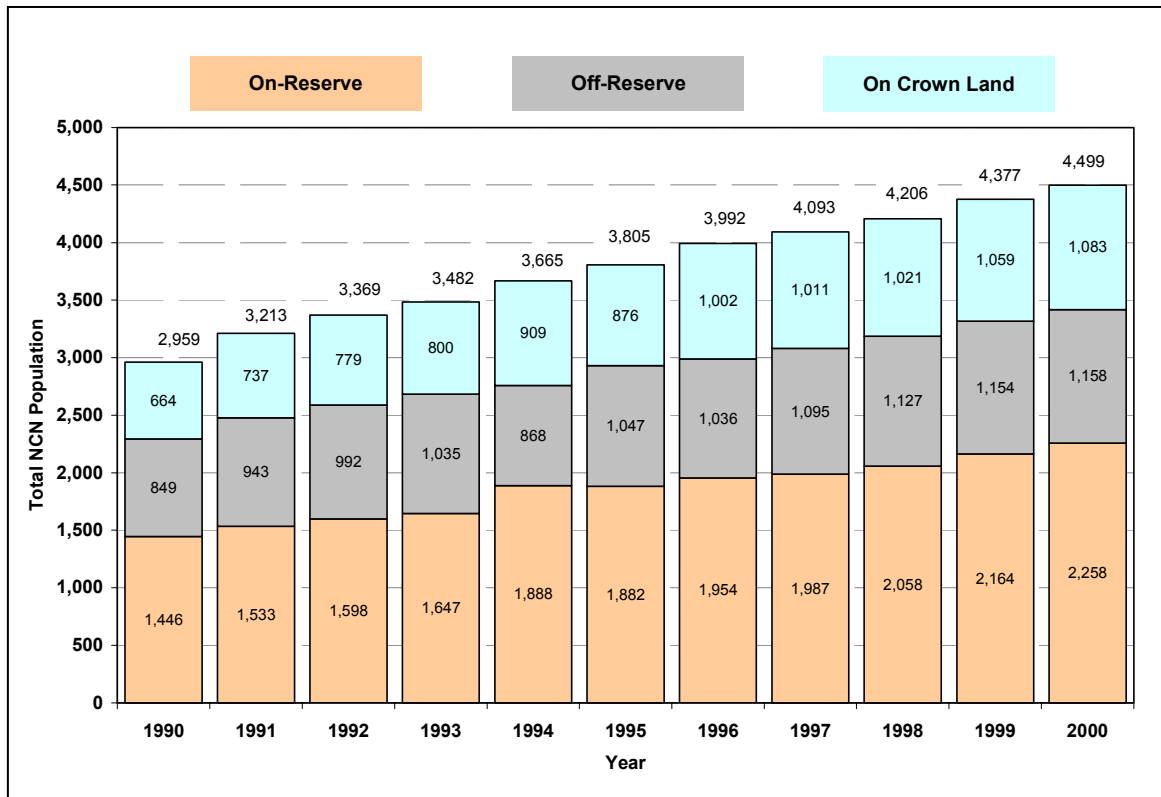
- 1 - Population data for 1990 to 2000 from INAC records. INAC records are based on membership data collected by the NCN Membership Clerk in Nelson House and forwarded to INAC each year.
- 2 - Population Totals Report for 1990 to 2000 from Health Canada, First Nations and Inuit Health Branch, Status Verification System (SVS).

Notes:

- 1 - Off-reserve population includes members living on another reserve. Most off-reserve members live in Thompson, Winnipeg and Brandon.
- 2 - South Indian Lake and Nelson House Northern Affairs populations represent the Crown land population.

³¹ Only INAC data were available to depict on-reserve, off-reserve and Crown-land populations of NCN members separately. Data collection is via self-reporting and tracking done by the NCN Band Membership Clerk.

Figure 4.1 Total NCN Population On-Reserve, Off-Reserve and On Crown Land: 1990 to 2000



Source:

1 - Population data for 1990 to 2000 from INAC records. INAC records are based on membership data collected by the NCN Membership Clerk in Nelson House and forwarded to INAC each year.

Notes:

- 1 - Off-reserve population includes members living on another reserve. Most off-reserve members live in Thompson, Winnipeg, and Brandon.
- 2 - South Indian Lake and Nelson House Northern Affairs populations represent the Crown land population, with the exception of 1994 and 1995 when 12 of the members noted lived on own band Crown land.

The male to female ratio of members living on-reserve and on Crown land versus those living off-reserve remained fairly stable in the eleven-year period from 1990 to 2000. INAC and FNIHB data sets indicate that during this period, the ratio of males to females on-reserve at Nelson House and on Crown land remained at approximately 1.1, while the ratio of male to female NCN members living off-reserve was between 0.7 and 0.8. This indicates that, in general, over this time period a greater number of males lived on-reserve than females or, conversely, that more females than males lived off-reserve. This suggests a higher propensity for females than males to move away from the NCN reserve to non-reserve and other reserve settings.

When compared to the provincial population, the NCN population is very young. Table 4.2 below shows the proportion of NCN members that were of school age, labour force age and seniors in 2000 for on-reserve, on Crown land and off-reserve populations, based on INAC data. Provincial proportions are also included for the sake of comparison.

Table 4.2 Proportion of School-Age Children, Total Labour Force and Seniors in the NCN On-Reserve, On Crown Land and Off-Reserve Populations, Compared to the Provincial Population: 2000

	NCN ¹			Manitoba ² (%)
	On-Reserve (%)	On Crown Land (%)	Off-Reserve (%)	
Proportion of school age children (ages 4-18)	43	56	61	21
Proportion of labour force age (Ages 15-64)	56	41	34	65
Proportion of seniors (65 years +)	3	3	3	14

Sources:

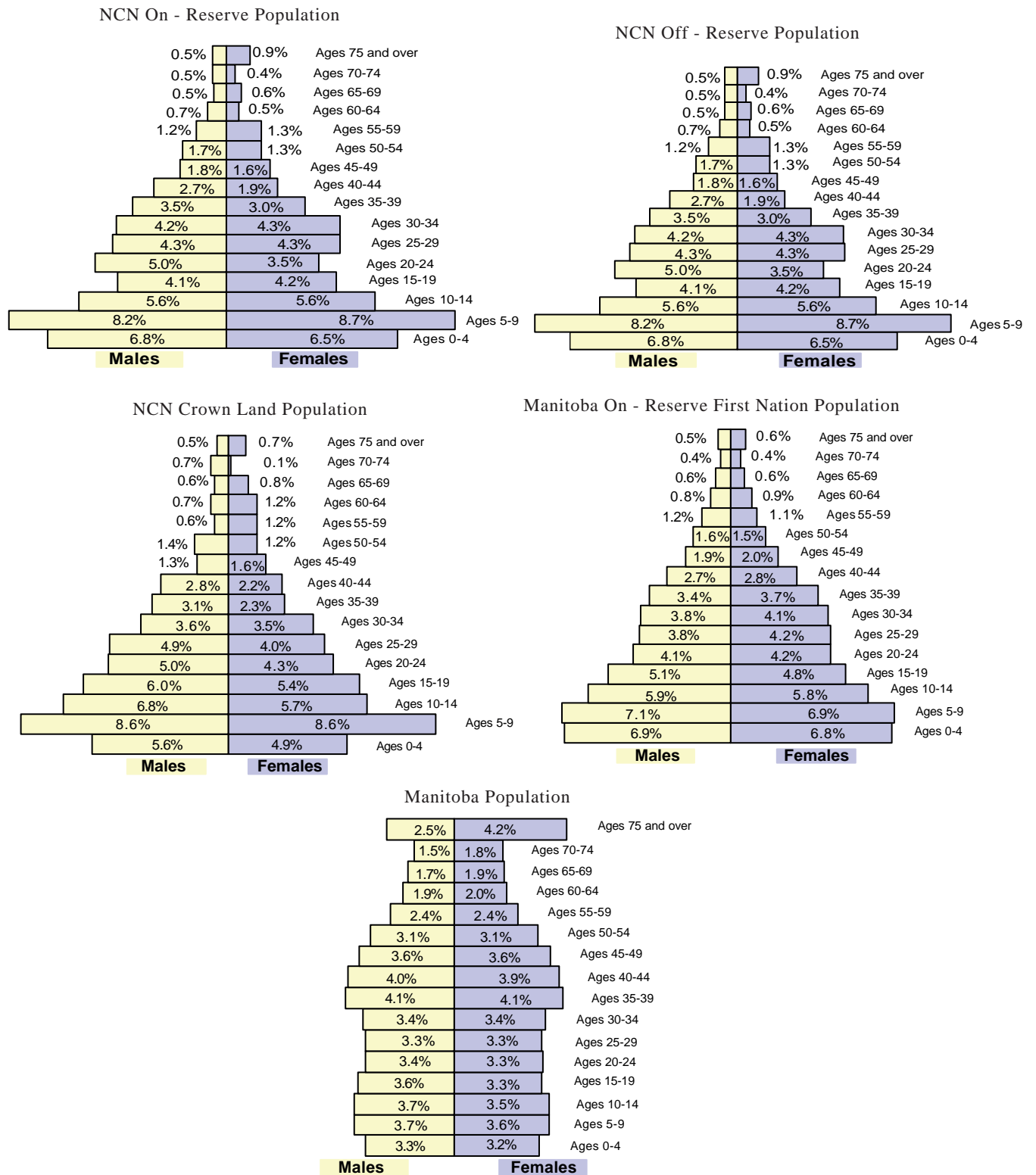
- 1 - Population data for NCN from INAC. INAC records are based on membership data collected by the NCN Membership Clerk in Nelson House and forwarded to INAC each year.
- 2 - Population data for Manitoba from the Manitoba Health Population Report for June 1, 2000.

Note:

- 1 - The school age population for Manitoba is calculated based on the population between the ages of 5 and 19 years.
- 2 - Totals do not add to 100% because of overlap in age between the population categories of school age children (ages 4 to 18) and total labour force (ages 15 to 64), as well as the absence of the 0 to 3 age group.

Figure 4.2 below depicts the age and sex pyramids of on-reserve, off-reserve and Crown land populations of NCN members for 2000 based on INAC data. For the sake of comparison, charts of the population distribution for all Manitoba First Nations and for Manitoba as a whole are also shown and were developed using 2000 Manitoba Health population data. These charts show the relative proportion of the total population by sex within each age group (ages 0 to 4, 5 to 9, etc.). They indicate that the NCN population is relatively young when compared to the provincial population, but is similar to the population of Manitoba First Nations as a whole. As well, they demonstrate that the NCN populations on-reserve and on Crown land tend to be younger than the off-reserve population. The off-reserve NCN population also has a greater proportion of female members, when compared to NCN's on-reserve and Crown land populations.

Figure 4.2 NCN Population On Reserve by Age and Sex in 2000 compared to the Provincial Population Distribution in 2000



Source: Developed by InterGroup Consultants Ltd. based on 2000 population data from INAC (NCN) and Manitoba Health (provincial population)

Over the next decade, NCN is expected to continue experiencing relatively high population growth. Total NCN membership is projected to grow from about 4,500 members in 2000 to between 5,808 and 7,150 members by 2011, excluding Bill C-31 reinstatements.³² (Between 2001 and 2011, approximately 52 Bill C-31 reinstatements are projected for NCN – 15 on-reserve and 37 off-reserve.) Of the projected population, between 2,969 and 3,687 members are projected to live on-reserve, 1,469 to 1,855 members are projected to live on Crown land and 1,375 to 1,629 members are projected to live off-reserve (see Table 4.3 below). (Detailed information on how these projected populations were calculated is available in Appendix 1, Section 2.1.)

On an annual basis, NCN is projected overall to experience growth rates between 2.4 and 4.3 per cent between 2000 and 2011. For comparison, the average annual growth rate in Manitoba between 1991 and 2001 was approximately 0.3 per cent and this relatively low annual growth rate is expected to continue into the future (Statistics Canada 1991 and 2001 Census data; Statistics Canada, *The Daily*, 2001).

Rapid population growth will present economic challenges for NCN in the future, particularly on-reserve at Nelson House (where growth rates are projected to be between 2.5 and 4.6 per cent annually) and in the Northern Affairs communities of South Indian Lake and Nelson House (i.e., Crown land populations; annual population growth rates here are expected to be between 2.8 and 5.0 per cent). These will come as a result of increased numbers of young people, greater numbers of people entering the labour force, and increased rates of family formation with associated demands for housing and other services. Although birth rates are generally declining, natural increase is expected to continue at well above the provincial average for many more years into the future.

³² In June 1985, the federal government introduced legislation to end the *Indian Act's* discriminatory provisions. The legislation - Bill C-31, *An Act to Amend the Indian Act* - respected three fundamental principles: end discrimination in the *Indian Act*; restore Indian status to people who voluntarily or involuntarily lost their status because of the *Indian Act*; give First Nations the option of assuming control of their own membership. The main impact of Bill C-31 has been the elimination of gender discrimination in the *Indian Act*, and the restoration of Indian status to people who lost it under the act's unjust provisions. The Bill was of particular significance to Indian women who, under the previous stipulations of the *Indian Act*, lost their status upon marrying non-Indian men (INAC 1997).

Table 4.3 Range of Projected Population for NCN Populations On-Reserve, On Crown Land and Off-Reserve: 2000 to 2011

Year	Range of Projected Population		
	On-Reserve	On Crown Land	Off-Reserve
2000 (actual)	2,258	1,083	1,158
2001	2,312 – 2,361	1,110 – 1,137	1,181 – 1,195
2002	2,373 – 2,469	1,143 – 1,194	1,204 – 1,232
2003	2,432 – 2,581	1,176 – 1,254	1,225 – 1,271
2004	2,494 – 2,699	1,208 – 1,317	1,246 – 1,311
2005	2,555 – 2,822	1,243 – 1,383	1,266 – 1,352
2006	2,619 – 2,950	1,278 – 1,452	1,286 – 1,395
2007	2,685 – 3,085	1,315 – 1,525	1,306 – 1,439
2008	2,748 – 3,225	1,351 – 1,602	1,323 – 1,484
2009	2,817 – 3,372	1,389 – 1,682	1,340 – 1,531
2010	2,891 – 3,526	1,429 – 1,766	1,357 – 1,579
2011	2,969 – 3,687	1,469 – 1,855	1,375 – 1,629
Average Annual NCN Growth Rate	2.5% to 4.6%	2.8% to 5.0%	1.6% to 3.2%
% Change in NCN Population: 2000 to 2011	31% to 63%	36% to 71%	19% to 41%

Sources:

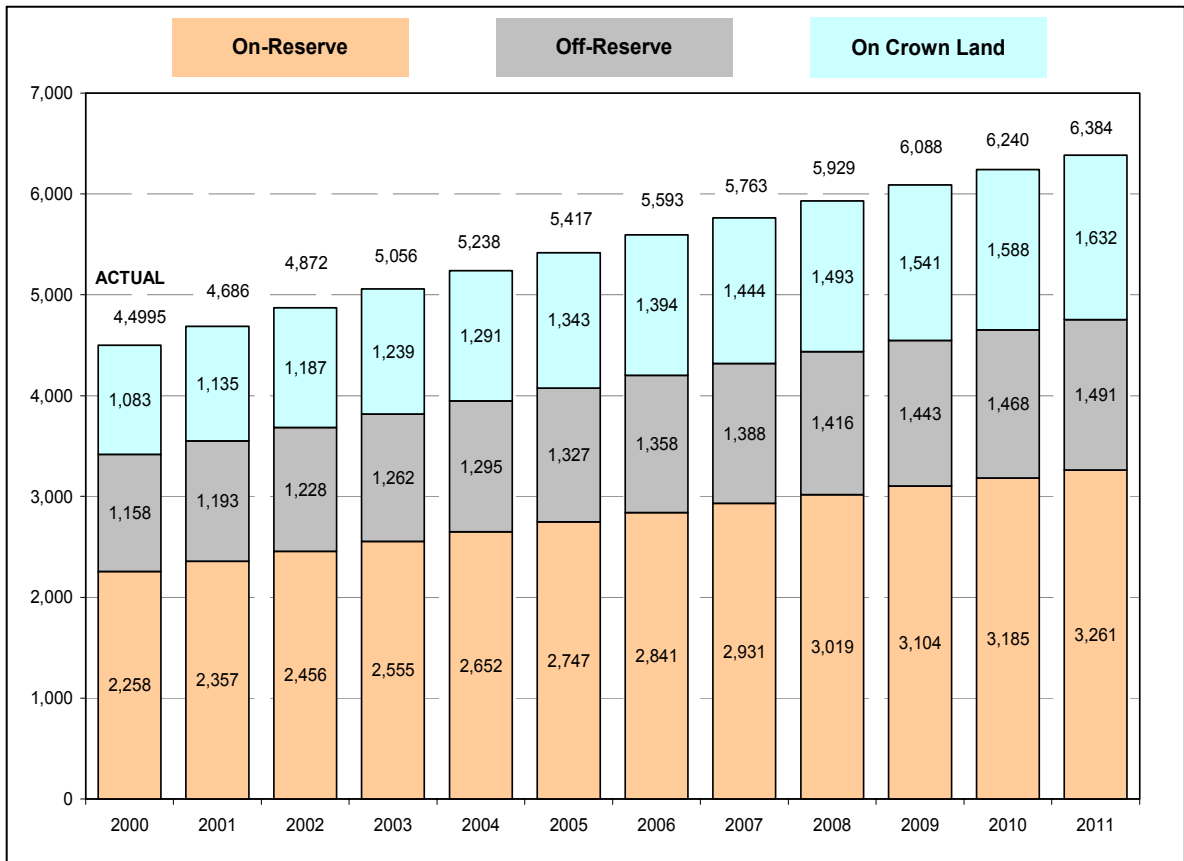
- 1 - INAC population data for 2000, as well as INAC population data for 1990 to 2000.
- 2 - INAC, 2001 projected fertility rates, survival rates and status inheritance rates for on- and off-reserve First Nation populations in Manitoba for 2001 to 2008. Similar rates for 2009 to 2011 were estimated based on trends seen in the 2000 to 2008 time period.

Notes:

- 1 - Excludes Bill C-31 Reinstatements. Between 2001 and 2011 approximately 15 Bill C-31 Reinstatements are projected for on-reserve NCN members and 37 are projected for off-reserve members.
- 2 - Off-reserve population includes members living on another reserve.

Figure 4.3 below demonstrates graphically the projected NCN populations on-reserve, on Crown land and off-reserve for 2000 to 2011 using a medium growth scenario.

Figure 4.3 Projected NCN Population On-Reserve, On Crown Land and Off-Reserve Using a Medium Growth Scenario: 2001 to 2011



Sources:

- 1 - INAC population data for 2000, as well the time period from 1990 to 2000.
- 2 - INAC, 2001 projected fertility rates, survival rates and status inheritance rates for on- and off-reserve First Nation populations in Manitoba for 2001 to 2008. Similar rates for 2009 to 2011 were estimated based on trends seen in the 2000 to 2008 time period.

Notes:

- 1 - Excludes Bill C-31 Reinstatements. Between 2001 and 2011 approximately 52 Bill C-31 Reinstatements are projected – 15 on-reserve and 37 off-reserve.
- 2 - Off-reserve population includes members living on another reserve.

4.2.2.2 NCN Land in the Nelson House RMA

As a base for settlement, for development and for other purposes, NCN has approximately 148,900 acres (603 square kilometres) of current and potential **reserve land** within the Nelson House RMA. This land falls into three general categories:

- Indian Reserve (IR) parcels (approximately 14,468 acres (59 square kilometres), or less than 10% of the total land base).

- Lands selected through the **Treaty Land Entitlement** process (79,435 acres or 322 square kilometres) of which approximately 63,743 acres (258 square kilometres) have been selected to date. All TLE selections have yet to be approved.
- Lands selected as part of the 1996 Northern Flood Agreement (NFA) Implementation Agreement (1996 Agreement) signed by NCN, Manitoba Hydro and the provincial and federal governments (approximately 55,000 acres or 223 square kilometres).

Each of these land categories is discussed in detail below.

Indian Reserve Parcels

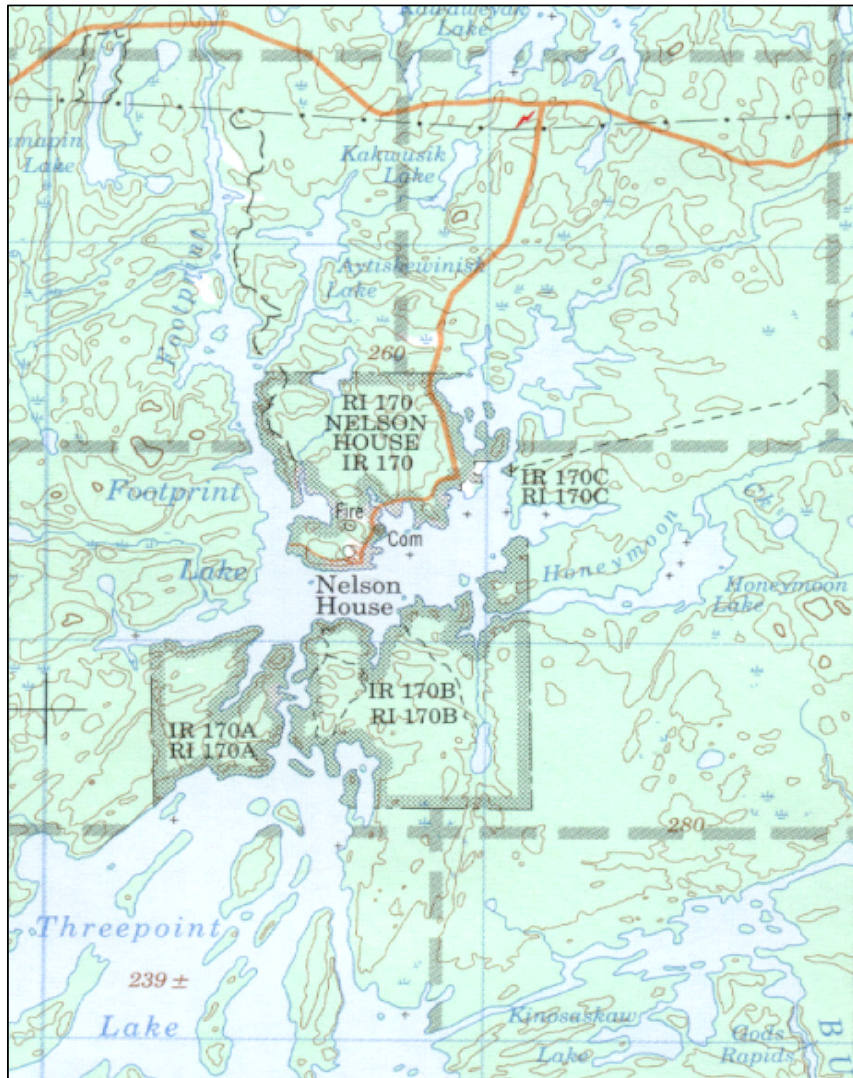
At present, NCN has four Indian Reserve (IR) parcels of land (see [Figure 4.4](#)):

- IR 170: the site of the Nelson House Reserve community, this is an 18.6 square kilometre (4,596 acre) parcel of land located on the northern shore of Footprint Lake.
- IR 170A: a parcel of 11.6 square kilometres (2,866 acres) located to the west on the southern shore of Footprint Lake.
- IR 170B: a parcel of 28.3 square kilometres (6,993 acres) located centrally on the southern shore of Footprint Lake.
- IR 170C: located on the northeast shore of Footprint Lake opposite the most easterly part of IR 170. This 0.03 square kilometre (74 acre) parcel is used as a cemetery site. (Indian and Northern Affairs Canada, 2001).

Although today most members live on IR 170, prior to the introduction of centralized community services, Band members resided along the shoreline of the entire reserve in clusters of families travelling along and across Footprint Lake, as well as at other locations in the RMA. Rather than settle in one location, many NCN members travelled in a seasonal round to various locations within and outside the RMA boundaries. With the provision of electricity, roads and schooling on IR 170, members moved to this location to take advantage of modern amenities. Today the community stretches approximately three miles along Footprint Lake (Hilderman Witty Crosby Hanna and Associates 1983). At present, IR 170 is nearing capacity and development of new reserve land will be required in the future. For example, the feasibility of developing the 170B reserve parcel is being assessed by the community. (As part of examining potential locations for the Project construction camp, consideration was given to constructing the camp at 170B or relocating camp infrastructure to this site for use by the community at the conclusion of the Project ([Volume 3](#) on the camp alternatives process).

A large number of NCN members also live in the Northern Affairs community of South Indian Lake, on the southeast shores of Southern Indian Lake. At present, members living in South Indian Lake do not have a reserve and reside on Crown and private land. However, NCN members and others living in South Indian Lake are in the process of trying to establish their own First Nation, the O-Pipon-Na-Piwin Cree Nation, and associated reserve land.

Figure 4.4 NCN Indian Reserve Parcels



Source: Canadian Department of Energy, Mines and Resources, Surveys and Mapping Branch.

Treaty Land Entitlements

As a signatory to the 1908 adhesion to Treaty 5, NCN is among the 20 member First Nations represented by the Treaty Land Entitlement (TLE) Committee. NCN signed their own band-specific Treaty Entitlement Agreement (TEA) in July 1998. Under their TEA, NCN is entitled to select 79,435 acres (322 square kilometres) of Crown land and receive a federal payment of \$1,933,017 (TLE Committee of Manitoba 2001).

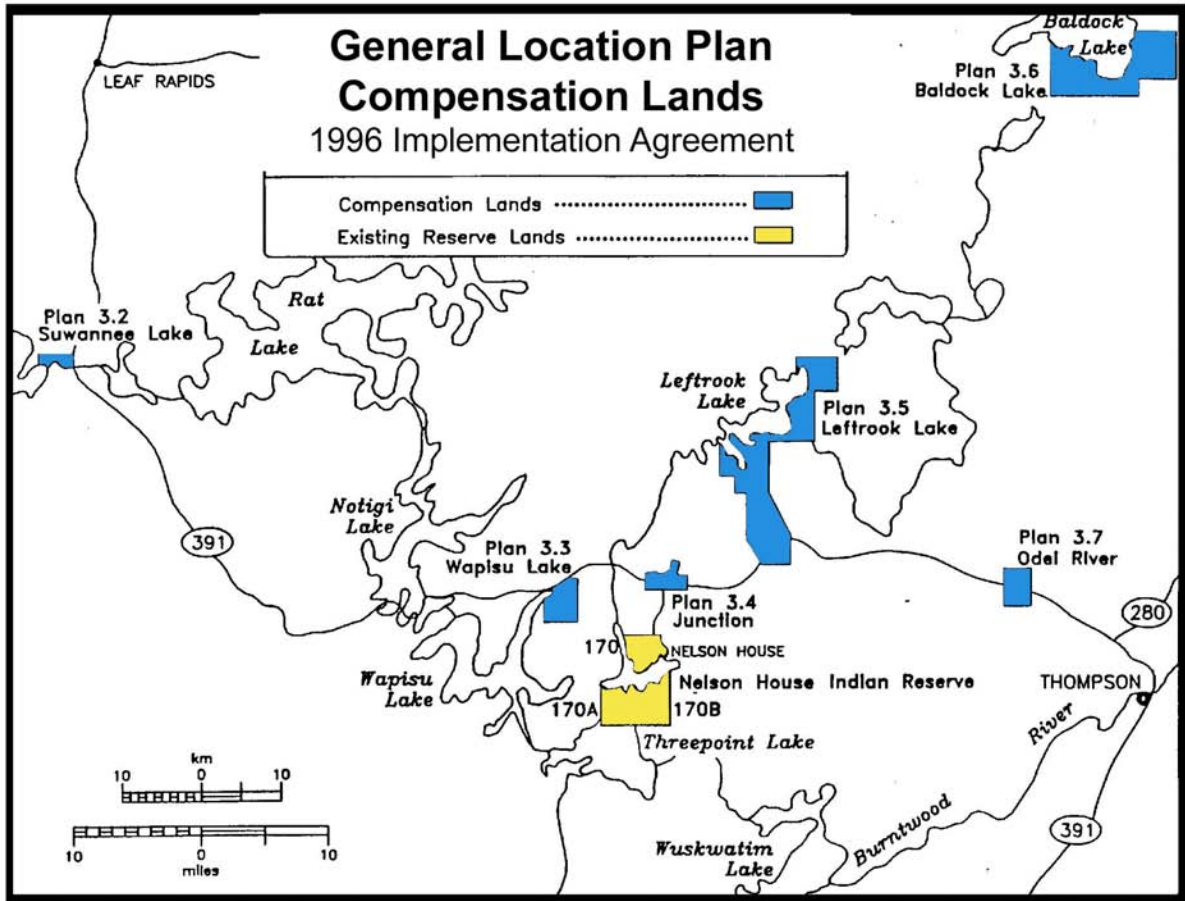
Currently, NCN is finalizing their land selections. As of January, 2003, NCN had selected 36 sites, ranging in size from about 11 to 5,830 acres (0.04 to 24 square kilometres) and totaling approximately 64,753 acres (262 square kilometres). The First Nation has approximately 14,682 acres (59 square kilometres) left to select (Manitoba Hydro 2003). Selections made to date, which include a number of sites in the Wuskwatim Lake area, are currently under review by the provincial and federal governments. They will need to be approved by these governments before becoming reserve land (for further details see [Appendix 1](#)). If approved, the purpose and use of these sites would vary.

NFA Compensation Land

Included as part of the 1996 NFA Implementation Agreement were provisions for new land to be provided to NCN. Under the original NFA, NCN was promised at least four acres of good land for every acre of land in the Nelson House Resource Area affected by northern hydro development during the 1970s. NCN had not received this land at the time of completing the 1996 NFA Implementation Agreement.

The 1996 NFA Implementation Agreement provided for about 17 acres of land for every acre of land in the Nelson House RMA affected by northern hydro development prior to 1996. The 1996 NFA Implementation Agreement also indicated which parcels of land would become new NCN Reserve Lands, based on selections made by NCN at that time. As a result, there are currently about 55,000 acres (223 square kilometres) of land at Baldock Lake, Leftrook Lake, Suwanee Lake, Wapisu Lake, Odei River and near Highway 391 in the process of being converted to NCN Reserve Lands (see [Figure 4.5](#)).

Figure 4.5 Compensation Lands Provided to NCN as Part of the 1996 NFA Implementation Agreement

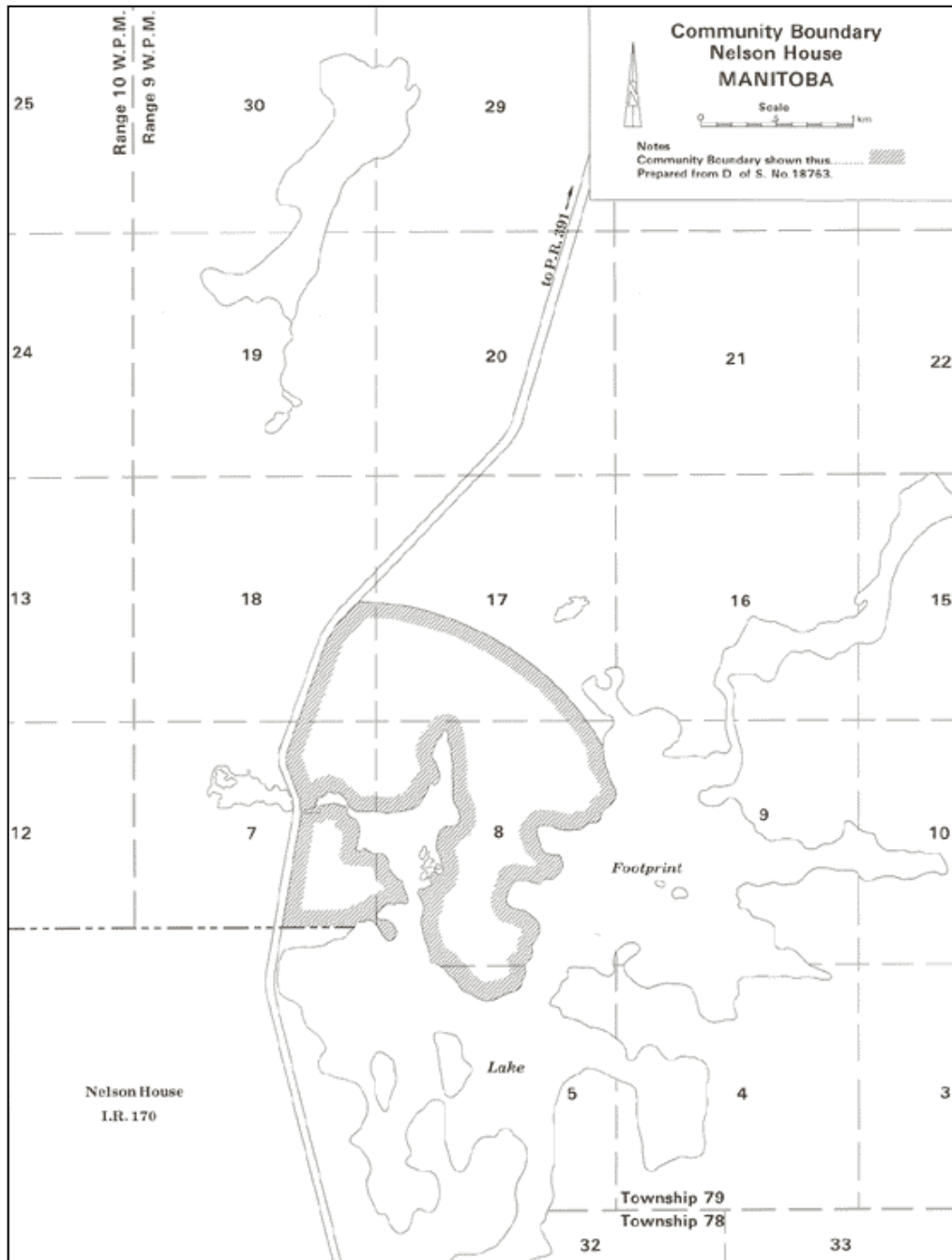


Source: 1996 NFA Implementation Agreement.

4.2.2.3 Nelson House Northern Affairs Community Land

The Nelson House Northern Affairs community lies to the northeast of the reserve community along a bay of Footprint Lake (see Figure 4.6). NCN members and others living in the community reside on Crown and private land.

Figure 4.6 Nelson House Northern Affairs Community Boundary



Source: Manitoba Rural Development Web site, 2001.

4.2.2.4 On-Reserve Housing

Housing, one of the most basic of necessities, is largely provided on-reserve by NCN to the majority of its members. Limited private housing stock has also been developed in recent years.

NCN gained control over the management of housing in Nelson House in the late 1980s and, today, housing is provided by the Nisichawayasihk Housing Authority (NHA). Services provided by the NHA include:

- Construction of all new community housing
- Renovation of existing housing
- Emergency housing repairs
- Plumbing and electrical services for homes, and
- Water tank cleaning.

As of 2002, there were approximately 393 accommodation units available to NCN members/residents living on-reserve:

- 366 houses
- 17 trailers, and
- 10 apartments (Footprint Engineering 2002).

Annually, an average of 10 to 20 new residences are added (Lederman Consulting 2000). Three eight-unit multiplexes were constructed and completed in spring 2002. Further plans for 2002/2003 include construction of a six-unit multiplex, two 24-unit apartment complexes and 18 new houses (NHA Board, personal communication, 2002).

The average size of a single-family home in Nelson House is approximately 1,100 square feet with four bedrooms. The age of homes varies:

- Less than one per cent of homes are under a year old
- Twenty per cent of homes are between 1 and 5 years old
- About 80 per cent of homes are between 5 and 20 years old, and
- Less than one per cent are over 20 years old (NHA, personal communication, 2001).

The Housing Program in Nelson House is under-funded and this has resulted in overcrowding in homes and a backlog of residents waiting for housing. There is an average of eight to ten people per home in Nelson House and about 140 homes have more than one family living in them. At present, there are over 100 families on the waiting list to receive a home, of which three to four per cent are members living off-reserve. Currently, priority is given to members requiring emergency housing, followed by those with medical problems (NHA, personal communication, 2001).

There are few abandoned houses in Nelson House, no matter the state of disrepair, given the high demand for and the short supply of available residences (Lederman Consulting 2000). For example, in 2001, only nine houses were vacant and this was because they were undergoing renovation (NHA, personal communication, 2001).

Table 4.4 below indicates the number of homes owned by the Band, either directly or with loans from the Canada Mortgage and Housing Corporation (CMHC), the NCN Trust and individuals, based on the 2002 *Capital Asset Inventory System (CAIS) Report (Draft)* prepared by Footprint Engineering. In 2002, approximately 279 houses, 17 trailers and 10 apartments were funded by the Band, either directly or through CMHC loans, while 82 homes were owned by the NCN Trust and 5 homes were privately owned (Footprint Engineering, 2002 (draft)). A housing ownership program currently in place through the NCN Trust and a rent purchase program proposed under the new NHA housing policy suggest there will likely be more individual homeowners in the future.

Table 4.4 Housing Ownership Inventory for NCN Members Living in Nelson House: 2002

Type of Housing	Band		NCN Trust Funded	Privately Owned	TOTAL
	Directly Funded	Funded through CMHC Loans			
Number of Houses	180	99	82	5	366
Number of Trailers	17	0	0	0	17
Number of Apartments	2	8	0	0	10
TOTAL	199	107	82	5	393

Source: Footprint Engineering Inc., CAIS Report, draft 2002.

4.2.2.5 Other Community Infrastructure

Community infrastructure beyond housing, as well as services provided to NCN members living on-reserve, is discussed in the sections that follow. In each case, only a brief

description is provided, noting any capacity issues or future expansion plans where relevant. These are important to determining any stress current systems may already be under. Detailed information on the infrastructure and services noted, including program descriptions, is available in [Appendix 1](#), Section 2.

Water and Sewer Supply

Nelson House drinking water comes from Footprint Lake and is treated on-reserve at the water treatment plant. This treatment plant was constructed in 1985. The water supply is not fluoridated (Lederman Consulting 2000). To handle sewage disposal, the reserve uses a lagoon system, through a combination of piped and trucked services. Approximately 69 per cent of homes receive piped water services, while the remaining 32 per cent of homes have water delivered by truck and stored in water tanks near the home (Footprint Engineering 2001). At present, the community is reaching the capacity of the local sewage system and plans are underway for expansion.

Electricity

Manitoba Hydro provides electricity to Nelson House and every home in the community has electricity (NHA, personal communication, 2001; Lederman Consulting 2000).

Community Roads

There are 32 roads in Nelson House and most of these were built in the 1970s and 1980s. Community roads range in quality from poor to average (Footprint Engineering 2001).

4.2.2.6 Other Community Services

Education Facilities and Services

In September of 1981, NCN assumed control over education in Nelson House by agreement with the Department of Indian and Northern Affairs. The Nelson House Education Authority (NHEA), governed by an elected school board, was established and granted authority by NCN Chief and Council for the management and administration, as well as leadership and direction, of all educational matters on-reserve (NHEA Policies 202 and 204, 1992).

Primary school students in Nelson House attend Otetiskiwin Kiskinwamahtowekamik ('Footprint School'), which offers Kindergarten to Grade 8 education. Those in

secondary school attend the newly named Nisichawayasihk Neyo Ohtinwak Collegiate, which offers S1 (Grade 9) to S4 (Grade 12) education. Enrolments at these two schools reached 976 students in the 2000/2001 school year (the most recent year for which data were available) (INAC Nominal Roll Report 2000/2001). This was up from approximately 830 students in the previous two school years. A small number of on-reserve members also attend schools off-reserve, primarily at R.D. Parker Collegiate in Thompson.

At present, both of the Nelson House schools are operating at or above capacity, with restricted financial and human resources, as well as space constraints. At Otetiskiwin Kiskinwamahtowekamik, and particularly at the lower grade levels, the number of students is straining available classroom space. Having moved out of Otetiskiwin Kiskinwamahtowekamik because of space constraints, the Nisichawayasihk Neyo Ohtinwak Collegiate is currently located in a series of ATCO trailers while the NHEA works to establish funding for a permanent high school.

Health Facilities and Services

Health services in Nelson House are provided through the following on-reserve facilities:

- Fannie Hart Medical Centre: a nursing station with x-ray facilities and laboratory capabilities for blood work and swabs (specimens sent to Thompson for processing). The nursing station employs two nurses with Bachelor of Nursing degrees and two Registered Nurses. Another Registered Nurse is employed on a part-time basis. Two General Practitioners (doctors) visit the community every week, while another visits Nelson House every third week. Physician services are available Tuesday through Friday. A pediatrician visits the community every other month. A dentist visits the nursing station every third week, and an eye doctor visits on a very sporadic basis. During the day, nurses and doctors at the nursing station see, on a walk-in basis, approximately 40 to 60 patients with a variety of illnesses and injuries. In addition, there are an average of 15 to 20 after-hours calls each day. Staff at the Nursing Station run a variety of programs and clinics for patients (Lederman Consulting 2000; NCN Nursing Station, personal communication, 2001). In terms of capacity, the facility is fully staffed, however, staff at the Nursing Station have indicated that space is currently limited (NCN Nursing Station, personal communication, 2002).

- Family and Community Wellness Centre: opened in March 2000, this facility was developed, in part, as a response to the 1999 Community Wellness Strategy. This strategy emphasized the need to integrate Health Related Services and Child and Family Services in Nelson House, with a Family and Community Wellness Centre to act as the focal point for promoting and facilitating Family and Community Wellness. Most community health related services and all child and family services are now based in this facility. A Board of Directors and an Executive Director oversee all of the programming and services of the Centre.
- Nelson House Medicine Lodge: an alcohol and drug rehabilitation treatment centre located on-reserve. Services provided at the Nelson House Medicine Lodge are available to all of the twenty-six First Nations in the MKO region of Manitoba.

The above facilities provide a range of health programming/services, all of which are discussed in [Appendix 1](#), Section 2.

In the future, services will also be provided at the NCN Elders Care Home, which is set to open in the near future. This 11,000 square foot facility will have 24 suites for community Elders and will provide Levels 1 through 4 medical care and housing for Elders who are no longer able to look after themselves.

In addition to the use of local facilities and services, many Nelson House residents use Thompson-based physicians, dentists and hospital facilities, as well as services in other locations.

Social Services

Social services on-reserve consist of the services provided through NCN Social Assistance and through the Child and Family Services division of the Family and Community Wellness Centre.

NCN Social Assistance coordinates the provision of social assistance on a monthly basis to approximately 500 NCN individuals/families in Nelson House with little or no income. (NCN Social Assistance, personal communication, 2002). Although demand for social assistance has increased steadily in recent years, the Department is adequately staffed to handle additional demand (NCN Social Assistance, personal communication, 2002).

NCN also operates Child and Family Services on-reserve, a responsibility they gained through decentralization of the Awasis Agency. Their primary role is to protect children at risk of abuse or neglect and to support and strengthen the well-being of families, particularly those experiencing difficulty in caring for their children. Given its broad mandate, Child and Family Services encompasses many roles, including provision of the following services: Jean McDonald Treasures of Hope Day Care Centre, Family Support and Preservation, The First Nations Family Justice: Mee-noo-stah-tan Mi-ni-si-win Program, Investigations of Child Maltreatment, Case Management, and Foster Home Placements.

Emergency Services

Emergency services in Nelson House include both ambulance and fire services. Initially combined, these services now operate independently.

Ambulance service to Thompson General Hospital, the full-service hospital closest to Nelson House, is available to residents of the Nelson House reserve community, as well as the adjacent Northern Affairs community. In general, the number of emergencies have been reduced since NCN began operating the ambulance and now average about one a day (Nelson House Fire Department, personal communication, 2002).

The Nelson House Fire Department works jointly with the smaller fire department in the Northern Affairs community of Nelson House and responds to domestic, commercial and forest fires on-reserve. They also work with the provincial government to provide training for fighting forest fires throughout northern Manitoba. Although the demand for the Department's services is high, they are considered to be adequately staffed and equipped to meet current demands. The Department also has the capacity to take on additional demand, if necessary (Nelson House Fire Department, personal communication, 2002).

Police Services

On reserve, NCN Police Services serves the Nelson House community. Typically, there are two constables on duty at any one time; however, during the middle and end of the month the number of complaints is often so great that another two constables are called on duty (NCN Police, personal communication, August 2001). The Thompson RCMP detachment also serves the community and will respond as the need arises (Lederman Consulting 2000).

Community Recreation

On-reserve recreation facilities include the Family and Community Wellness Centre, the Gilbert McDonald Arena (which houses a Youth Drop-in Centre), and Otetiskiwin Kiskinwamahtowekamik. A number of programs are offered at these facilities, ranging from organized sports to arts and cultural programming. NCN Parks and Recreation, funded through the Nisichawayasihk Trust Office, also funds and organizes a variety of sports programs and provides sponsorship for local tournaments, transportation for recreation trips to participate in organized activities, and recreational equipment for the organized activities. They also manage the local Junior B Hockey Team, the NCN Flames. With Trust funding, NCN Parks and Recreation has also constructed and maintains several playgrounds in the community.

Additional NCN Government Services

Additional NCN Government services include: Probation Services, Human Resources, Technical Services, and Resource Management.

Nisichawayasihk Trust Office

The Nisichawayasihk Trust Office was created as part of the 1996 NFA Implementation Agreement. Under this agreement, monies received by NCN in payment for the settlement of claims are placed in the Trust, which is controlled, managed and protected on behalf of the community by a group of Trustees appointed by Chief and Council.

The Trust Office was created at the same time to administer the Community Approval Process (CAP) used for determining how Trust monies are to be allocated and the distribution of Trust monies as approved through this process. On an annual basis, interest earned by monies in the Nisichawayasihk Trust is distributed to various community programs and projects through CAP, a process by which community members decide which projects receive funding. Typically, the Trust funds programs/projects in the areas of Agreement and Implementation, Housing, Community Infrastructure, Economic Development, Safety and Governance, Aboriginal Heritage, Education, and Community Improvements.

In addition to funding NCN Parks and Recreation, the NCN Fire Department, NCN Police and housing construction, the Nisichawayasihk Trust, through the Trust Office,

administers and/or funds the Granny & Grandpa Program, the School Breakfast Program, the Country Foods Program and the Resource Management Board.

Nelson House Future Development

In 1997, an NCN Future Development Team was established to facilitate discussion between NCN and Manitoba Hydro regarding proposed future hydroelectric developments within the Nelson House Resource Management Area. The Future Development Team engages in discussions with Manitoba Hydro, conducts research on an array of topics, guides the community involvement process and consults with an external environmental assessment team about the potential effects of proposed future hydroelectric developments, including the proposed Project. As part of the Future Development process, the Future Development Team established a fully-staffed Future Development Office in Nelson House, as well as a smaller office in South Indian Lake.

4.2.3 Effects and Mitigation

The following outlines anticipated Project-related effects and mitigation on population, infrastructure and services in the Local Region reserve community of Nelson House. It is expected that most effects will be felt during the Project's construction phase. Where deemed necessary, mitigation measures are also presented.

4.2.3.1 Construction Phase

Prior to and during the construction phase, training, employment and business opportunities may result in return migration of NCN members to Nelson House in order to seek out training, employment and business opportunities associated with construction of the Project. There may also be reduced out-migration, as local residents are optimistic about the community's economic future. Alternatively, some residents may choose to use Project incomes to move to other locations (e.g., Thompson) for various reasons. The latter two are very difficult to estimate.

In order to estimate Project-related migration, minimum and maximum scenarios were prepared for the Nelson House reserve community. Considered in these in-migration scenarios were the group of individuals who indicated in opinion surveys that they had left the community for economic reasons (e.g., lack of employment opportunities). Those who left the community for other reasons (e.g., housing, family relationships) were considered to be unlikely to return with the prospect of construction-phase benefits. The two scenarios are outlined in [Table 4.5](#) below. It should be noted that NCN Opinion Surveys were conducted under the context of future development, and this may have

served to bias the results. For this reason, it is likely that actual migration will be closer to estimates presented in the minimum scenario.

Table 4.5 Estimated Return Migration to Nelson House During the Construction Phase under Minimum and Maximum Scenarios:

	Estimated Return Migration	Assumptions
Minimum Scenario:	Estimated 15 to 30 individuals and some with their families (an additional 35 to 100 persons) would return to Nelson House.	<ul style="list-style-type: none"> • A small proportion of those who indicated in opinion surveys that they would move to Nelson House if the Project were to proceed (considered sub-set of members who are under 50 years of age and not employed full-time, living in Winnipeg, Thompson and other locations (other than South Indian Lake)), would actually make the decision to move. • Current housing shortage (i.e., backlog of more than 100 homes in 2002/2003) and lack of services (e.g., banks, theatres) mitigate against migrating to Nelson House.
Maximum Scenario:	Estimated 50 to 120 individuals, and some with their families (an additional 120 to 420 persons), would return to Nelson House.	<ul style="list-style-type: none"> • A high proportion (80 per cent) of those members who indicated in opinion surveys that they would return to Nelson House if the Project proceeds (considered sub-set of members who are under 50 years of age and not employed full-time, living in Winnipeg, Thompson and other locations (other than South Indian Lake)) would return.

Note:

1 - All estimates based on the results of NCN Opinion Surveys in Nelson House (2000), Winnipeg and Thompson (2001).

Training opportunities at Nelson House in advance of the construction phase (began during 2002 and will continue during 2003) are likely to initiate some level of in-migration prior to construction. This return migration is likely to continue into the first stage (Years 1 and 2) of the construction phase, as potential workers seek to improve their chances of being hired or obtaining business benefits from the Project. During this first stage, NCN businesses would be the major contractors (assuming that negotiated contracts are completed successfully; to date, these have not been finalized) and would be able to directly hire qualified Aboriginal employees. Also during this period, community-based training efforts to develop skills needed for Stage 2 of construction (Years 3 to 6)

would be peaking. It is likely that in-migration would decline following after year 2, but it is unclear as to the rate or extent of decline of in-migration.

Set against the potential for in-migration is the possibility of out-migration by those who may use new construction income to move, probably to Thompson, for various reasons. This out-migration trend has been observed at Nelson House for reasons of housing, services (including specialized medical care) and education opportunities. The extent of this offsetting migration trend is difficult to predict.

It is likely that families would accompany members returning for work. Based on results of opinion surveys, additional family members per worker were assumed to range from 2.5 to 3.5 (considering average family size and the fact that some people without families will return). Families are likely to be young, with children of pre-school or grade-school age. In addition, to the extent that families stay in Nelson House, they are likely to grow by natural increase, given that they are of optimal child-bearing age.

Outcomes of this potential population change are as follows:

- Housing: Any additional population increase is likely to strain the current backlog of required housing (and associated sewer and water infrastructure). Crowding would result if families choose to stay with relatives. There are currently an average of eight to ten persons per dwelling and about 140 of the 390 dwellings have more than one family living in them. More than 100 families are on the waiting list to receive a dwelling.
- Education Facilities and Services: Education facilities and services at Nelson House (Otetiskiwin Kiskinwamahtowekamik School and Neyo Ohtinwak Collegiate) are at capacity in terms of space, funding and staffing. New children, particularly at the lower grade levels, would add to these shortages.
- Day Care: Day care services would also be stretched by new, young families with pre-school aged children.
- Other Service Areas: Demand for other services would be created by new population in the areas of health facilities and services, social services, policing and enforcement and community recreation. Interview data suggest that most of these services currently have some additional, although limited, capacity to support a larger population base. The one exception is health facilities, which are currently operating at capacity and facing space constraints.

Given the difficulty in estimating accurately the precise level of in-migration and out-migration, effective monitoring (see Section 4.2.6) at Nelson House of population change will be important to help local government to track and respond to changes. Early planning among service providers for the range of possible population change scenarios is important. In addition, a mechanism for coordination among key service providers and regular reporting of monitoring results to this group are critical. Measures are possible to discourage in-migration (e.g., offering daily transportation services between Thompson and Nelson House for those enrolled in training). NCN will consider these measures as part of their impact management planning for the Project.

4.2.3.2 Operations Phase

During the operations phase of the Project, NCN will start to realize the stream of revenue stemming from their investment in the Project (see Section 3.2.3.2). Depending on community priorities, this revenue may be used to improve and develop Nelson House infrastructure and services. At this time, it is not possible to determine the probability or extent of this effect.

4.2.4 Cumulative Effects

Pending Project approvals, the Wuskwatim Transmission Project will start construction concurrently with the construction phase for the Project. Additionally, based on current planning, there is a possibility that the Gull/Keeyask Generating Station (potential construction start of 2007), the Notigi Project (potential construction start of 2009) and/or the Conawapa Project (possible construction start of 2006) could start to be developed near the end of the Project construction phase and into the Project operation phase.³³

The Wuskwatim Transmission Project will offer only limited employment and business opportunities and is not anticipated to generate any further migration into the Local Region, beyond that already predicted for the Project. Similarly, the Notigi Project is relatively small and, on its own, is not likely to generate additional in-migration into the Local Region.

Development of the Gull/Keeyask Generating Station and/or the Conawapa Project will generate a substantial amount of construction employment – an estimated 1,500 and 1,800 workers at peak, respectively. Anticipation and speculation about employment on

³³ Section 2.2.7 provides full details on the approach and methodology for assessing cumulative effects and the future projects and activities included as part of the cumulative effects assessment for this SEIA.

one or both of these two projects has the potential to generate additional return migration of NCN members to Nelson House. Although it is not possible at this stage to predict the magnitude of this return migration, it is likely to be considerably less than that predicted for the Project for the following reasons:

- The distance of Nelson House from these projects (approximately 250 kilometres from the Gull/Keeyask Project and 400 kilometres from the Conawapa Project)
- The likelihood that there will be few, if any, negotiated contracts with NCN during project construction
- The likelihood of fewer project-related training opportunities based in the community, and
- The fact that many NCN members will already have returned to the community in anticipation of Wuskwatim training and employment.

The Tolko Forestry Management Plan also indicates that there may be harvesting in areas of the Nelson House RMA within the next 13 years. Although not likely to generate additional in-migration, this activity may provide some employment for Local Region residents beyond the Project's construction phase and could discourage out-migration.

4.2.5 Residual Effects and Significance

This section presents the estimated residual effects of the Project to Infrastructure and Services in the Local Region. Residual effects incorporate, to the extent possible, cumulative effects noted in Section 4.2.4 and consider the effect of impact management measures that are planned. Based on criteria outlined in Section 2.2.8, the significance of these effects for the Region is assessed, along with the general direction of change (positive, negative or elements of both).

[Table 4.6](#) presents a summary of residual effects and significance of effects (including direction of change – positive or negative) by Project phase. No significant adverse effects are anticipated with respect to the Project's socio-economic effects on infrastructure and services in the Local Region.

Table 4.6 Residual Effects and Significance of Effects on Infrastructure and Services of the Local Region

Project Phase	Residual Effects	Significance ¹
Construction	Strain on infrastructure and services as a result of Project-related in-migration	Moderate (-) (Not Significant)
Operations	Improvements/additions to community infrastructure and services using revenue from ownership interest	Moderate – Major (+) (Significant)

Note:

1 - See Section 2.2.8 for definitions adopted for this assessment.

During construction, the Local Region community of Nelson House is likely to experience moderate adverse effects on infrastructure and services. Effects will accrue as a result of Project-related changes in local population (i.e., in-migration to Nelson House to seek out employment and training opportunities) and will be felt primarily in the area of community housing. The extent of in-migration is difficult to predict. For this reason, effective monitoring and a coordinated service group ready to respond with impact management plans for a range of possibilities are considered to be essential (see Section 4.2.6 below). The measures being considered by NCN to discourage in-migration (e.g., offering daily transportation services between Thompson and Nelson House for those enrolled in training) will also play an important role in managing this effect, and are likely to result in the effects on infrastructure and services not being significant.

Community-based training and Project-related construction employment opportunities may result in return migration of NCN members of working age and their families to Nelson House. Estimates of the magnitude of this migration range from 35 to about 400 individuals, reflecting the high degree of uncertainty associated with migration estimates.

Return migration to Nelson House is expected to begin when community-based training is initiated and to continue into the first stage of the construction phase. In-migration is likely to drop off following this first stage of construction; however the rate or extent of decline is unclear. If the Gull/Keeyask Generating Station or the Conawapa Project is approved and begins construction during phase 2 of Project construction, there is a possibility that an additional, small number of NCN members may return to the community to seek out employment opportunities on these projects.

Based on past experience, some out-migration may also occur by NCN members with construction-related employment income, for example, seeking to obtain an owned dwelling or different education opportunities for their families in Thompson.

Any level of in-migration to Nelson House, particularly by young returning families, is likely to strain housing, education and other services oriented to children and young families. Depending upon the extent of in-migration, new demands could be placed on budgets in key housing and service agencies. Impact management measures are possible for NCN service providers in key areas. Given the high degree of uncertainty related to migration estimates (evident here in the large range of in-migration estimates presented in the minimum and maximum scenarios), timely information through monitoring will be an important tool for addressing this potential effect (see Section 4.2.6 below).

During the operations phase, and depending on community priorities, the stream of revenue stemming from NCN investment in the Project could be used to improve and develop Nelson House infrastructure and services. At this stage, it is not possible to predict the probability or significance of this effect.

4.2.6 Monitoring and Follow-up

Appropriate monitoring and impact management measures will be established and implemented for the community of Nelson House. For Nelson House, key indicators will be used to determine the extent of in-migration, out-migration and natural growth. Monitoring data will be reviewed by an NCN Coordinated Response Committee (made up of NCN key service providers) who may, if necessary, implement impact management measures.

4.3 PROJECT REGION

Outside of the Local Region, effects on infrastructure and services are expected to occur primarily in the City of Thompson (and LGD in Mystery Lake) as a result of its proximity to the Project. For this reason, details on population, as well as infrastructure and services for the City of Thompson are more thoroughly examined. A general level of detail about infrastructure and services in Project Region Aboriginal communities (excluding those found in the Local Region) is also provided as there is a possibility of very small levels of population change in these communities. Population change in these Project Region Aboriginal communities is expected to be very limited because of their distance from the Project site, the low levels (relative to NCN) of Project employment

opportunities, and the lower levels (relative to NCN) of Project-related and community-based pre-Project training opportunities.

4.3.1 Sources of Effect

Outside of the Local Region, Thompson could see in-migration as a result of the Project, including a small number of senior Hydro staff and senior contractor staff and their families; those seeking to be near the construction site for recruitment, or even commuting purposes; and, potentially, NCN members with construction jobs seeking to find housing or other services in Thompson. Also, in Thompson, demand for services is likely to be generated by up to 540 workers in the construction camp during the course of the six-year construction phase.

Outside of Thompson, there is a possibility that Aboriginal communities in the Project Region (excluding those found in the Local Region) may see very small levels of population change – potential in-migration as a result of the assumed hiring preference policy and associated northern residency requirement; potential out-migration, as a result of Project income for workers.

4.3.2 Existing Environment

Beyond the Local Region, any population changes and associated effects from the Project on facilities or services are expected to be felt primarily in the City of Thompson and the LGD of Mystery Lake. Therefore, this section provides a profile of the current and projected future population of Thompson and a profile of key service areas. (The LGD of Mystery Lake, which had a population of 5 people in 1996, is considered as part of the City of Thompson.) Also provided is basic population information for other communities that make up the Project Region, as well as a general overview of infrastructure and services in the Region's Aboriginal communities (excluding Local Region Aboriginal communities). Further detail can be found in [Appendix 1](#).

4.3.2.1 Population Characteristics – Thompson

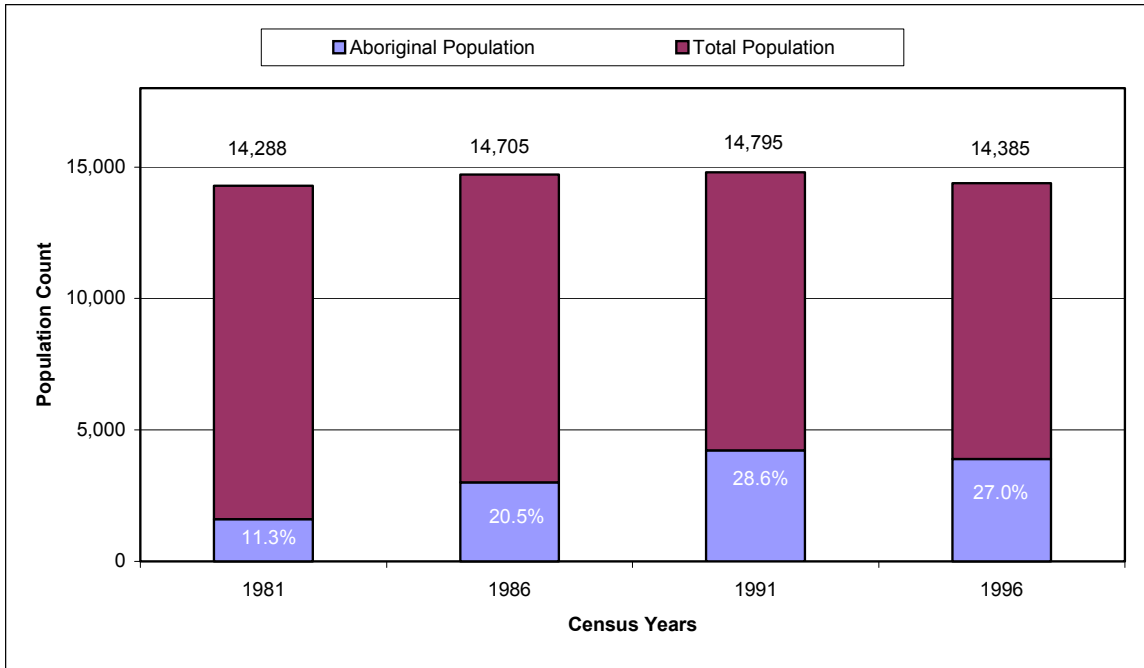
Thompson is home to the third largest population in the Province of Manitoba (Mystery Net Project 2001). Throughout Thompson's history, total population levels have fluctuated. During the 1970s, the early years of Thompson's history, population levels increased annually. This consistent growth trend (including sometimes large annual increases) ended in the mid-1970s. Subsequently, population levels entered a period of decline until about 1981. Fluctuations have continued since 1981, but have been less dramatic than during Thompson's early years (Mystery Net Project 2001).

According to the 1996 Census of Canada, the total population of Thompson was about 14,000 people, representing 1.3 per cent of Manitoba's total population (Statistics Canada 1996).³⁴ More recent Manitoba Health data place the population of Thompson as of June 1, 2000 at about the same level of 14,000 people, representing 1.2 per cent of the provincial population (Manitoba Health 2000).

The Aboriginal portion of the Thompson population has experienced similar fluctuations over time, following trends in the total population. In recent years, however, growth in Thompson's Aboriginal population has been more rapid than in the total population. The increasing proportion of Aboriginal residents within the total Thompson population is shown in [Figure 4.7](#) below. In 1996, the total Aboriginal population of Thompson was about 4,000 individuals, representing 28 per cent of the community's total population. However, local residents estimate that the Aboriginal portion of the total Thompson population is higher - 40 per cent or larger (City of Thompson, personal communication, 2002; City of Thompson Real Estate Agents, personal communication, 2002; and Manitoba Intergovernmental Affairs, personal communication, 2002).

³⁴ The 2001 Census data have recently become available, and are being reviewed to confirm that a complete and consistent data set can be provided for all communities and regions under review in the SEIA. If feasible, the 2001 data may be added to Volume 8 at a later time.

Figure 4.7 Total Thompson Population and Thompson Aboriginal Population: 1981, 1986, 1991 & 1996



Sources: Statistics Canada 1981, 1986, 1991 and 1996 Census of Canada.

Notes:

- 1 - With the exception of 1981, the definition of Aboriginal in all years referred to in this table includes Registered Indians, those holding Band membership and/or those individuals reporting Aboriginal ancestry. Data from the 1996 Census of Canada has been adjusted to align with the earlier Census of Canada definition of an Aboriginal person. Caution should be used when comparing data from the different years.
- 2 - Incomplete data: 20 per cent sample data.
- 3 - Totals may not add due to rounding.

Both the total and Aboriginal populations in Thompson can be described as relatively youthful when compared to the total population of the Province. Table 4.7 below indicates that, in 1996, 46.0 per cent of the Thompson population was under the age of 25, with only 2 per cent over the age of 65. At that time, 60 per cent of Thompson's Aboriginal population was under the age of 25, 43 per cent was under the age of 15 and only 1 per cent of the population was over the age of 65. In comparison, 36 per cent of the 1996 Manitoba population was under the age of 25, with 14 per cent aged 65 and older (Statistics Canada 1996).

Table 4.7 Proportion of School Age Children, Total Labour Force and Seniors in the Thompson Total and Aboriginal Populations Compared to the Provincial Population: 1996

	Total Thompson Population (%)	Thompson Aboriginal Population (%)	Manitoba (%)
Proportion of school age children (ages 5-19)	27	37	21.7
Proportion of labour force age (Ages 15-64)	69	55	64.4
Proportion of seniors (65 years +)	2	1	13.7

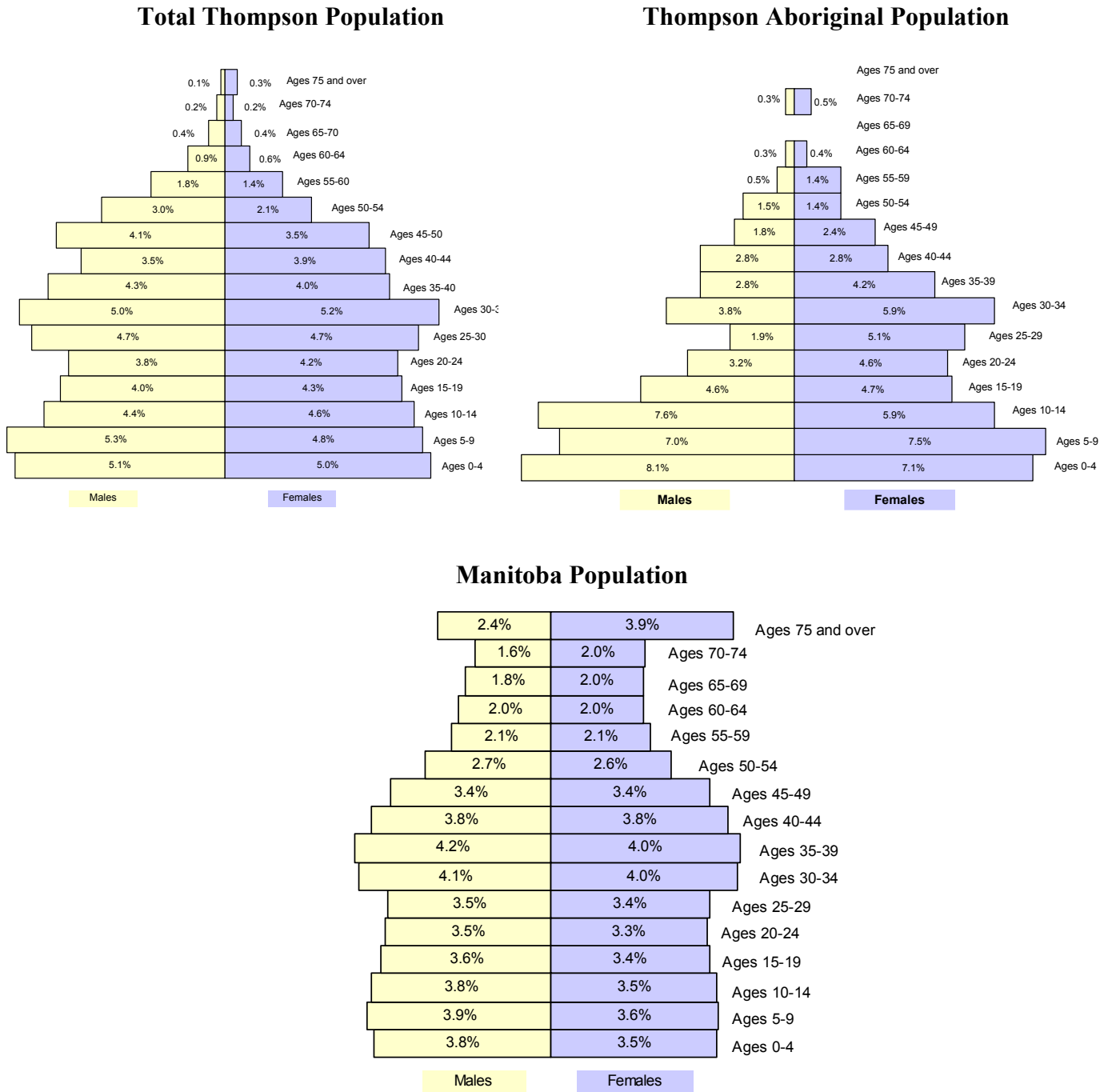
Source: Statistics Canada, 1996 Census of Canada.

Note:

- 1 - Totals do not add to 100% because of overlap in age between the population categories of school age children (ages 5 to 19) and total labour force (ages 15 to 64), as well as the absence of the 0 to 3 age group.

Similarly, the age-sex pyramids in below indicate graphically the differences between the relative distribution of males and females by age for Thompson’s Total and Aboriginal populations, as compared to the provincial population in 1996.

Figure 4.8 Thompson Total and Aboriginal Populations by Age and Sex in 1996 compared to the Provincial Population Distribution in 1996



Source: Statistics Canada 1996 Census of Canada.

Notes:

- 1 - Incomplete data: 20 per cent sample data.
- 2 - Totals may not add due to rounding.
- 3 - Total Aboriginal population refers to all Registered Indians, all persons reporting being of Aboriginal Ancestry, all Band members, as well as all persons identifying as Aboriginal.

Annual growth rates for the population of Thompson reflect the overall trends in population numbers. Table 4.8 below highlights annual growth rates of the Thompson population using data obtained from both the Census of Canada and the Manitoba Health Population Reports. The two sources use different methods for data collection, and as a result variation between the annual growth rates occurs. Population levels are anticipated to increase slightly to between 14,500 and 17,500 people by 2011. (Full details on how these projections were calculated is available in [Appendix 1](#), Section 3).

Table 4.8 Annual Growth Rates for the Population of Thompson: 1981 to 1996

Time Period	Statistics Canada ¹			Manitoba Health ²		
	Total	Male	Female	Total	Male	Female
1981 to 1986	0.6%	0.1%	1.1%	-0.6%	N/A	N/A
1986 to 1991	0.1%	0.5%	0.3%	-0.1%	N/A	N/A
1991 to 1996	-0.6%	-1.2%	-0.4%	0.8%	0.5%	1.2%
1996 to 2000	N/A	N/A	N/A	-1.7%	-2.2%	-1.3%
Overall - 1981 to 1996	0.1%	-0.2%	0.3%	0.03%	N/A	N/A

Sources:

- 1 - Statistics Canada 1981, 1986, 1991 and 1996 Census of Canada.
- 2 - Manitoba Health 2000 Population Report.

Annual growth rates for Thompson’s Aboriginal population are presented separately in [Table 4.9](#) for five-year intervals from the Census years 1986, 1991 and 1996. It should be noted that the annual growth rate among the Aboriginal population was substantially greater than that of the total population during the 1986 to 1991 period. Annual growth rates for both Census periods were higher for the female population than the male population. It is anticipated that growth in Thompson’s Aboriginal population will continue at a greater rate than growth in the total population, with the Aboriginal population (based on Census data) reaching between about 5,600 and 6,000 in 2011 (or approximately 35 per cent of Thompson’s total population compared with 28 per cent in 1996). (These projections are based on INAC fertility and survival rates for Manitoba First Nations living off-reserve for 2000 to 2011. Full details on how these projections were calculated are available in [Appendix 1](#), Section 3. As noted earlier, local information suggests that the Aboriginal population is actually much greater than reported by Census data.)

Table 4.9 Annual Growth Rates of the Aboriginal Population in Thompson: 1981 to 1996

Time Period	Total	Male	Female
1981 to 1986	13.4%	16.9%	10.4%
1986 to 1991	7.0%	5.4%	8.4%
1991 to 1996	-1.6%	-2.2%	-1.2%
Overall – 1981 to 1996	6.1%	6.5%	5.8%

Source: Statistics Canada 1986, 1991 and 1996 Census of Canada.

Note:

- 1 - It should be noted that annual growth rates for the 1981 to 1986 and 1986 to 1991 periods may be overstated due to the passing of Bill C-31 in 1985. A number of Aboriginal individuals in Thompson may have regained their Aboriginal status during these periods, as Bill C-31 changed the definition of an “Aboriginal Person”, allowing individuals who had either voluntarily or involuntarily lost their status (become disenfranchised) under the Indian Act to re-register. The Bill was of particular significance to Indian women who, under the previous stipulations of the Indian Act, lost their status upon marrying a non-Indian man.

4.3.2.2 Population Characteristics – All Communities in the Project Region

In addition to Thompson and the LGD of Mystery Lake, the Project Region consists of a variety of First Nation, incorporated and Northern Affairs communities, including those found in the Local Region (i.e., the reserve community of Nelson House and the Northern Affairs communities of South Indian Lake and Nelson House). Population data for each of these community types is presented separately in the sections below.

First Nation Communities

Table 4.10 below shows the available population data from three different sources for First Nation communities in the Project Region. Where data were available, on- and off-reserve populations are specified (off-reserve includes Crown Lands).

Table 4.10 Total Population of Project Region First Nation Communities: 1996, 2000 and 2002

Community	Statistics Canada 1996	Manitoba Health 2000	INAC ¹ January, 2002
Nisichawayasihk Cree Nation (NCN) (Also included in the Local Region)			
• On-reserve ²	1,760	2,226	2,360
• Off-reserve ³			2,354
Tataskweyak Cree Nation (TCN)			
• On-reserve	1,500	1,274	1,847
• Off-reserve			822
War Lake First Nation			
• On-Reserve	155	83	80
• Off-reserve			144
York Factory First Nation			
• On-reserve	300	278	412
• Off-reserve			543
Fox Lake Cree Nation			
• On-reserve	155	230	141
• Off-reserve			1,768
Pimicikamak Cree Nation (PCN)			
• On-reserve	3,495	2,977	4,085
• Off-reserve			1,682
Norway House Cree Nation ¹			
• On-reserve	3,400	3,493	4,069
• Off-reserve			1,455
Total On-Reserve	10,765	10,561	12,994
Total Off-Reserve			8,768

Sources:

- 1 - Census of Canada 1996.
- 2 - Manitoba Health Population Report, June 1, 2000. Note that First Nations members are counted according to the postal code (location) where they reside.
- 3 - Indian and Northern Affairs Canada (INAC), January 2002 (except for Norway House Cree Nation).
- 4 - Norway House Cree Nation Profile, 2000.

Notes:

- 1 - No INAC 2002 information was available for Norway House. The most recent INAC data presently available (December 2000) are used for Norway House. (Source: Norway House Cree Nation Profile). The data do not distinguish off-reserve populations on Crown Land.
- 2 - "On-Reserve" includes registered males and females on own reserve.
- 3 - "Off-Reserve" includes registered males and females on other reserves and off-reserve, as well as on Crown Land.

First Nation communities in the Project Region have young populations, with approximately 35 to 40 per cent of their residents below the age of 15 years. This was nearly double the comparable proportion of the provincial population (which was approximately 20 per cent in both 1996 and 2000). The age characteristics of First Nation communities in the Project Region correspond closely to the provincial First Nation population, where 40 per cent of the population was under 15 years of age in both 1996 and 2000 (Manitoba Health 2000, Statistics Canada 1996).

Based on Manitoba Health data for 1995 to 2000, annual population growth rates in Project Region First Nation communities were higher than the provincial population: approximately 2.2 per cent annually for Project Region First Nation communities between 1995 and 2000, as compared to 0.1 per cent provincially over the same period (Manitoba Health 2000).

Incorporated Municipalities

Incorporated municipalities in the Project Region include the Town of Gillam and the City of Thompson and LGD of Mystery Lake. In 1996, the total population of these communities was 15,928 individuals – 1,543 in Gillam and 14,385 in Thompson and the LGD of Mystery Lake. More recent data from the 2000 Manitoba Health Population Report place the population of these communities at 15,566 individuals – 1,526 in Gillam and 14,040 in Thompson.

Both the Thompson and Gillam populations can be characterized as relatively youthful when compared to the total population of the Province. In 1996, 46.0 per cent of the population in these communities was under the age of 25, with only 1.7 per cent over the age of 65. In comparison, 35.8 per cent of the 1996 Manitoba population was under the age of 25, with 14.0 per cent aged 65 and older (Statistics Canada 1996).

Annual growth rates for Project Region incorporated communities are relatively low when compared to Project Region First Nation and Northern Affairs communities. Between 1995 and 2000, the annual population growth rate calculated for these communities was 0.1 per cent per year, using Manitoba Health population data. Gillam actually experienced negative annual growth during this time period of -4.2 per cent. Statistics Canada data for 1991 and 1996 indicate average annual growth over the time period from 1991 to 1996 of -1.2 per cent for Project Region incorporated communities. During this time period, both Thompson and Gillam experienced negative annual growth of -0.8 per cent per year and -4.1 per cent, respectively.

Northern Affairs Communities

The most recent population data for Northern Affairs communities in the Project Region are from the 1996 Census of Canada and are outlined in Table 4.11 below. The population of the Northern Affairs community of Ilford is included as part of the War Lake First Nation population in the section on First Nation Communities above.

Table 4.11 Total Population of Northern Affairs Communities in the Project Region: 1996

Northern Affairs Community	1996 Total Population
Nelson House (also in Local Region)	77
South Indian Lake (also in Local Region)	887
Pikwitonei	140
Thicket Portage	204
Wabowden	563
Cross Lake	412
Norway House	575
Total	2,858

Source: Manitoba Northern Affairs 1998.

Growth rates for Northern Affairs communities in the Project Region were calculated over the period from 1991 to 1996 using Statistics Canada data. These data indicate that, over this six-year period, each of the six Northern Affairs communities in the Project Region experienced positive annual population growth rates. The average annual population growth rate during this time period for these communities was 2.1 per cent per year. The provincial growth rate over this same time period (1991 to 1996) was significantly lower at 0.4 per cent (Statistics Canada 1996).

4.3.2.3 Community Infrastructure – City of Thompson

Given Thompson’s close proximity to the proposed Project, infrastructure and services are expected to be affected to some extent. In particular, the community is expected to play a key role in the provision of transportation services during the construction phase of the generating station. There is also potential for migration into the community of workers interested in employment and business opportunities associated with the Project. This in-migration may place additional demands on the current stocks of affordable housing and temporary accommodation in the community. It may also create additional

demand for some community services, most notably day care, which is one of the few programs in Thompson operating at capacity.

Transportation Infrastructure

As a regional centre, the City of Thompson will play a role in the transportation of supplies, equipment and people to the construction site. The following provides information on transportation infrastructure for the City of Thompson and LGD of Mystery Lake, including roads and available air, bus and railway transportation.

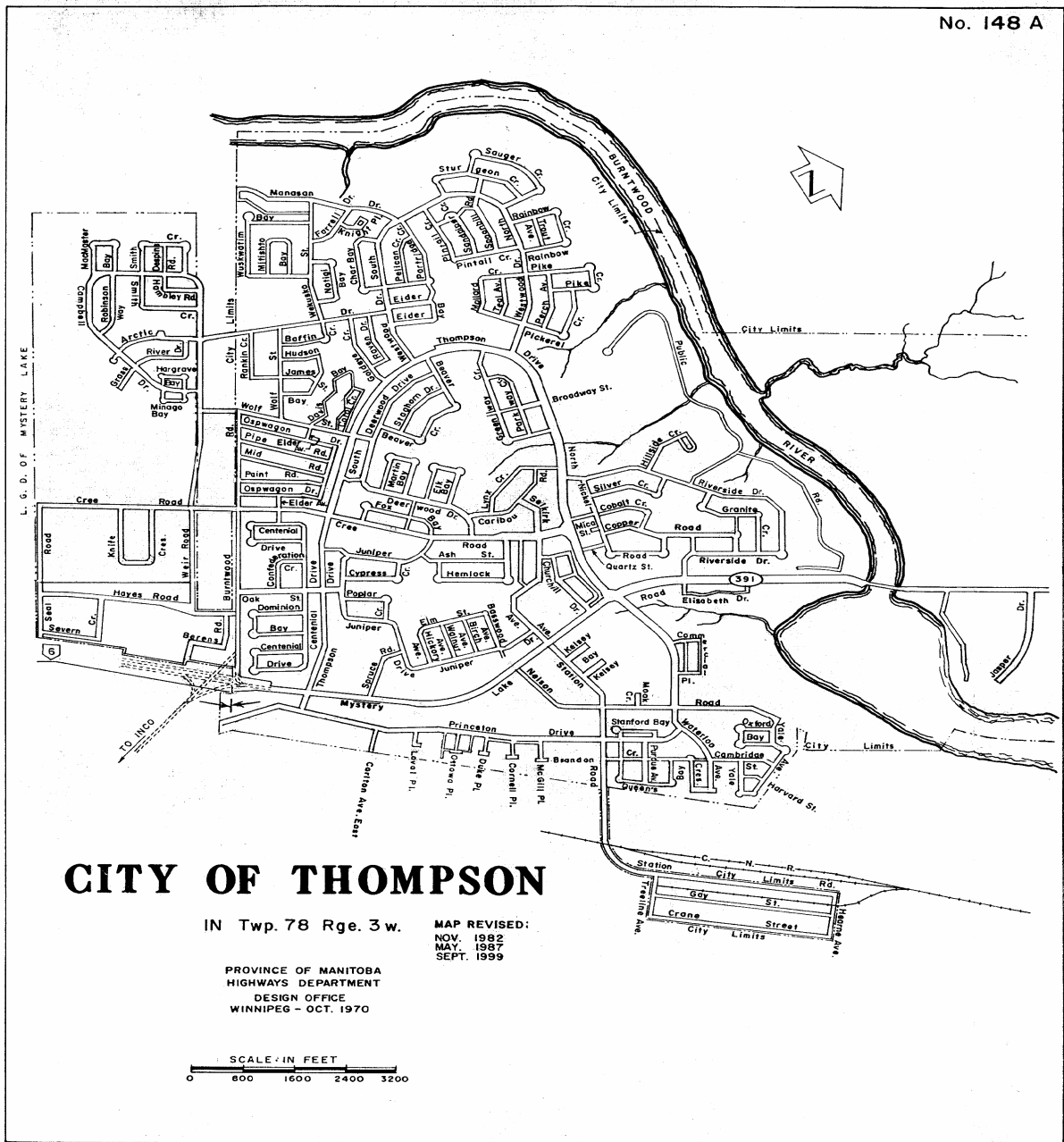
Roads

Thompson is connected to Lynn Lake and Nelson House via Provincial Road (PR) 391, to Split Lake and Gillam by PR 280, and to Winnipeg by Provincial Trunk Highway (PTH) 6. All are all-weather, two-lane highways. The travelling distance between Thompson and Winnipeg by highway is 756 kilometres, or approximately eight hours (Mystery Net Project 2001).

PTH 6 turns into PR 391 at the southern limit of Thompson. Through the city, PR 391 becomes a four-lane divided street, known as Mystery Lake Road (see [Figure 4.9](#)).

Traffic volumes, accident rates and capacity of Thompson's internal road network are discussed further in section 5.2.2.1.

Figure 4.9 Thompson's Internal Road Network



Source: Manitoba Transportation and Government Services 1999

Air Transportation

Airport and terminal facilities are located approximately 10 kilometres outside of Thompson. The airport covers a total area of 1,083 acres, and has two runways (Manitoba Intergovernmental Affairs 2001). Airport facilities consist of an air terminal building, an air traffic control tower with limited hours of operation, a flight service station and a maintenance garage (Manitoba Intergovernmental Affairs 2001).

The airport is serviced by Calm Air and serves as a base for Pimicikamac Air, Skyward Aviation, Custom Helicopters, Manitoba Government Air, RCMP Air Division and Dene Cree Air (Thompson Municipal Airport 2001). The largest aircraft using the airport is the Boeing 737. Flight time from Winnipeg to Thompson is approximately two hours (Mystery Net Project 2001).

In 1997, air carriers transported 168,000 passengers to and from the Thompson airport; there were 30,792 aircraft landings (Mystery Net Project 2001).

Thompson is also accessible by float plane via the base on the Burntwood River (Manitoba Intergovernmental Affairs 2001).

Bus Transportation

Bus service (passenger and freight) is available between Thompson and Winnipeg as well as other destinations. Bus services are provided by Grey Goose Bus Lines (Mystery Net Project 2001).

Grey Goose coaches have a 54-person seating capacity, so the current daily capacity for transporting individuals from Thompson to destinations in Manitoba, and vice versa, is 108 persons (Grey Goose Bus Lines, personal communication, 2001).

Rail Transportation

Via Rail services the Winnipeg to Churchill route three times per week. The service allows passengers to board and exit the train at Thompson, providing transportation to points both north and south of the City. The Hudson Bay Railway Company offers freight services (Mystery Net Project 2001).

The seating capacity of the Hudson Bay train, the unit used by Via Rail along the Winnipeg to Churchill route, is 130 persons. The weekly transportation capacity between

Winnipeg and Thompson is 390 persons one way (Via Rail personal communication 2001).

Thompson Housing

Although migration into the City of Thompson as a result of the Project is expected to be relatively small, those who do migrate will require some form of housing.

The number of dwelling units in Thompson has remained stable over the past fifteen years, as seen in Table 4.12 below.

Table 4.12 Occupied Private Dwellings in Thompson: 1986, 1991, 1996

Types of Housing	1986	1991	1996
Single-detached house	2,280	2,195	2,400
Semi-detached house	N/A	165	150
Row house	N/A	400	365
Apartment, detached duplex	N/A	5	0
Apartment building, five or more stories	330	330	345
Apartment building, less than five stories	250	1,390	1,275
Other single attached house	N/A	N/A	0
Movable Dwelling	N/A	435	390
All other types	1675	N/A	N/A
Total number of occupied private dwellings	4,545	4,925	4,935

Sources: Statistics Canada 1996, 1991 and 1986 Census of Canada.

Notes:

- 1 - The above figures vary in terms of the percentage of residents sampled. In 1986 and 1991, 100 per cent of the population was sampled. In 1996 only 20 per cent of the population was sampled.
- 2 - An "Occupied Private Dwelling" refers to a private dwelling in which a person or group of persons are permanently residing. Also included are private dwellings whose usual residents are temporarily absent on Census Day. These data, however, exclude private dwellings occupied solely by foreign and/or temporary residents (Profile of Census Divisions and Subdivisions in Manitoba-Part A, 1996).

As of January 2002, the City of Thompson Post Office reported that there were 3,336 duplexes and houses and 1,709 apartments in Thompson (City of Thompson Real Estate Agents, personal communication, 2002).

According to local real estate agents, many dwelling units are unoccupied, with approximately 100 to 150 dwelling units currently available in the Thompson area. The average price of these units ranges from \$85,000 to \$115,000 (City of Thompson Real Estate Agents, personal communication, 2002). There are also several building lots available for those interested in building a home.

Few apartment units are unoccupied in Thompson. There is typically a very low vacancy rate for apartments in the City, with a slight increase in vacancy during the summer months when local schools and university programs are closed (City of Thompson Real Estate Agents, personal communication, 2002). Rent for a one-bedroom apartment is approximately \$400 to \$500 per month, and a two-bedroom apartment costs between \$500 and \$600 per month (City of Thompson Real Estate Agents, personal communication, 2002).

Temporary Accommodation – Thompson

Travel to and from the construction site by contractors and others is likely to mean some increase in use of temporary accommodation. In Thompson, temporary accommodation includes hotels, bed and breakfast facilities and hostels (see Table 4.13 below).

Table 4.13 Thompson’s Hotel and Bed & Breakfast Rooms: 2001

Name of Accommodation	Number of Rooms
Hotels	
Country Inn & Suites	61
Mystery Lake Motor Hotel	69
Ramada Hotel	58
Thompson Inn	43
Meridian Motel	41
Interior Inn	54
Northern Inn & Steak House	22
Bed & Breakfasts	
Anna's Bed & Breakfast	1
Northern Lights Bed & Breakfast	6
Shinook's Bed & Breakfast	7
Total Number of Rooms	362

Source: Manitoba Intergovernmental Affairs 2001.

In general, the cost of a hotel room in Thompson currently ranges from \$40 to \$80 for a single room and \$45 to \$90 for a double room. Rates at bed and breakfast facilities vary from \$40 to \$55 for a single room and \$50 to \$60 for a double room (including breakfast).

There are also two hostels in Thompson:

- The Ma Mow We Tak Friendship Centre has 26 beds.
- The YWCA Residence has 104 beds (Manitoba Intergovernmental Affairs 2001).

Water and Sewer Services

The Burntwood River supplies fresh water to Thompson's water treatment plant. All developed areas within the City of Thompson are served by the municipal water system. This system is localized and does not provide service to any other areas or communities. There is no cost for the water service. The water system is owned and operated by INCO Ltd. (Manitoba Intergovernmental Affairs 2001).

There is a water supply agreement between the City of Thompson and Manitoba Hydro that ensures that a continuing and satisfactory water supply is available to the City, i.e. one that is not be adversely affected by Hydro operations (City of Thompson 1976).

The sewage system in Thompson utilizes a primary system to remove solids and a large lagoon to aerate and later chlorinate the wastewater. Almost all of Thompson's businesses and residences are served by the municipal sewage collection system and treatment facility (Manitoba Intergovernmental Affairs 2001).

Both the current water and sewage systems have excess capacity (Manitoba Intergovernmental Affairs 2001).

Waste Disposal Services

The City of Thompson shares a modern landfill site with the Local Government District of Mystery Lake. The site is located five kilometres south of the City (City of Thompson, personal communication, 2002). The remaining capacity of the waste disposal grounds is 90 years (Manitoba Intergovernmental Affairs 2001).

4.3.2.4 Community Services – City of Thompson

The following is an overview of services provided to community residents in the City of Thompson. Where known, capacity concerns are noted.

Educational Facilities & Services

Mystery Lake School Division #2355 has approximately 3,500 students enrolled in Thompson's six elementary schools and one high school. The Westwood Elementary School is the only school currently operating near capacity. All of the others could

accommodate additional students (Mystery Lake School Division, personal communication, 2002).

Many vocational and post-secondary schooling options exist in and around Thompson, the most notable being Keewatin Community College, Inter-Universities North, the University of Manitoba, Brandon University Teacher Education Program (BUNTEP), Access North Northern Nursing Program and the Faculty of Social Work at Thompson (University of Manitoba's Northern Program).

There are also six group day care centres, seven licensed family day care homes and two nursery schools in Thompson. Currently, all of these facilities are full and there is a waiting list for spots that become available (City of Thompson Day Care Services, personal communication, 2002).

Health Services

Health Services in Thompson are provided by a number of organizations, but for the most part fall under the jurisdiction of the Burntwood Regional Health Authority (BRHA). The BRHA has been in operation for six years and is the largest regional health authority in Manitoba. Thompson is the only city within the Burntwood Region and provides many of the health services utilized by the region's over 45,000 residents.

BRHA operates the Thompson General Hospital, a 72-bed acute care facility when fully operational and the Northern Consultation Centre, a specialist clinic that operates in association with the Hospital. The BRHA recently completed the Burntwood Community Health Resource Centre, which brings together Thompson-based primary health care programs and community nursing programs (BRHA 2001). At present, there are ten family physicians working in the Centre. Other professionals at the centre include Nurse Practitioners, Community Health Nurses, Midwives, Family Counselors, Aboriginal Liaison Workers, a Nutritionist, a Health and Recreation Liaison Worker, and Lab Services Technicians (BRHA 2001).

There are two private medical clinics in Thompson owned and operated by General Practitioners (City of Thompson Web site 2000).

Although there are currently no long-term care facilities in Thompson, planning and fundraising are underway to design and start construction of such a facility by 2003. Functional programming for the facility began in 2001 and the BRHA is currently fundraising for the community contribution required to begin the project (BRHA 2001).

The BRHA and others also offer a number of health programs in the community, which generally fall into the categories of public health, mental health and home care.

Other health services in Thompson include:

- Six dental clinics
- Ophthalmologists and optometrists who travel to the community regularly from Winnipeg (Manitoba Intergovernmental Affairs 2001).
- The Thompson Chiropractic Clinic, and
- Five retail pharmacies in Thompson (Manitoba Intergovernmental Affairs 2001).

Community Recreation

Recreation services for Thompson are primarily provided by the City of Thompson Recreation, Parks and Culture Department. Provincial agencies like the Department of Culture, Heritage and Citizenship, Health and Family Services and a number of volunteer and non-profit organizations also help to provide such services.

Recreation facilities operated by the City include the Thompson Recreation Complex, the Norplex Pool, the Thompson Public Library, the Heritage North Museum, fifteen baseball/fastball diamonds, two senior soccer fields, five junior soccer fields, five tennis courts, ten playgrounds, three outdoor rinks, two outdoor wading pools and 35 kilometres of cross-country ski trails. The City of Thompson's Recreation, Parks and Culture Department provides support for programming in a variety of recreational areas. None of these programs is currently at capacity and all could handle additional participants.

Other recreational facilities available to Thompson residents but not operated by the City include: Thompson Golf Club, Mystery Mountain Winter Park, a twelve lane 5-pin bowling facility, the Burntwood Curling Club, Thompson Trailbreakers Inc. (which maintains a number of snowmobile trails in the Thompson area – see Section 5.3.2.2), the Northern Ballet Academy, the Kelly Waterman School of Dance, and Better Body Fitness (Mystery Net Project 2001).

Policing Services

The Thompson Detachment of the Royal Canadian Mounted Police (RCMP) is a federal police force, but in Thompson it serves as a municipal police force by contract. There are thirty-six officers in Thompson and at any time at least seven are on duty. There are also

eight support staff. Staffing levels for the Thompson RCMP detachment have remained fairly constant over the past eight years. Typically, one staff member is hired for every 500 people in their jurisdiction (City of Thompson RCMP Detachment, personal communication, 2002).

The main RCMP office in Thompson is open 24 hours a day. There is also a community office in The Plaza (Mystery Net Project 2001). There are an additional eleven regular rural contingency members stationed at Nelson House, Split Lake, York Landing, Pikwitonei and Thicket Portage.

In terms of infrastructure, there are three holding tanks in Thompson, without bunks. There are also eleven cells that can each hold two or more individuals, which were built four years ago (City of Thompson RCMP Detachment, personal communication, 2002).

Emergency Services

Emergency Services for the City of Thompson are provided by a combination Fire/Ambulance Department which has been in existence since 1959 and currently consists of 20 full-time and 19 auxiliary members (Mystery Net Project 2001).

The Thompson Fire Department has a total of 39 members: one Chief, one Deputy Chief, twenty full-time firefighters trained in both Emergency Medical Services (EMS) and fire services, and nineteen auxiliary firefighters that work in the community and are on call. Auxiliary staff are trained in-house, paid once a year and do not have the same level of training as the full-time staff. Firefighters are on duty 24 hours a day, seven days a week throughout the year (City of Thompson Emergency Services, personal communication, 2002).

The Fire Department receives, evaluates and dispatches all of its own calls and deals with all incidents that fall outside RCMP jurisdiction. This includes handling any City-related business after normal working hours (i.e., 5 p.m. to 9 a.m.). The Department responds to calls up to the Nelson House Junction and as far south as Pisew Falls. They also provide 24-hour alarm services for 64 premises within the City at a cost of \$15.00 per month (Manitoba Intergovernmental Affairs 2000).

Medical responses are dealt with by an on-duty staff trained to Emergency Medical Assistance 1 (EMA1) standards with additional skills like intravenous (IV) maintenance, tube maintenance and semi-automatic defibrillation (SAED) certification. The Department has two Commander III type modular ambulances, as well as the use of the

Chief and Deputy Chief's Suburbans, both of which can be converted for stretcher transport. Additional fire equipment available to respond to medical emergencies includes a Walter Cr500 Foam Truck (Medium), a Jaws of Life and two sets of breathing apparatus with two extra tanks. The secondary Emergency Response Medical Services (ERMS) is provided by the City of Thompson Fire/Ambulance Department (Mystery Net Project 2001). Emergency services are available 24 hours a day at the Thompson Hospital.

The number of emergency ambulance calls has increased significantly over the past ten years. There were 1,458 ambulance calls in 1990 and 2,186 calls in 2001 (Thompson Fire and Emergency Services 2001). Increased numbers of ambulance transfers between the hospital and the airport, the aging population of Thompson and the need for an increased reliance on Thompson's medical services by outlying communities may contribute to the increase in ambulance calls (City of Thompson Emergency Services, personal communication, 2002).

4.3.2.5 Community Infrastructure – Aboriginal Communities in the Project Region

The following provides a general overview of community infrastructure in Aboriginal communities in the Project Region, excluding those found in the Local Region. All of the data presented are from published sources.

Transportation Infrastructure

All of the Aboriginal communities within the Project Region (and outside of the Local Region) have internal road systems; however, road connections outside the community vary. Five of the eleven communities have year-round, all-weather road access. Cross Lake (Pimicikamak Cree Nation and the Northern Affairs community of Cross Lake) has nearly year-round access with an all-weather road and one short ferry/winter road crossing at Pipestone Lake. The community is inaccessible by road for about one week during freeze-up and break-up seasons. (A new bridge across Pipestone Lake, the Netnak Bridge, has been approved for construction and will provide year-round road access to Cross Lake once completed in late 2004.) The remaining five Aboriginal communities in the Project Region are accessible by a combination of ferry, winter road, rail and air service (INAC 2001).

Housing

Much like the Local Region, the majority of the housing stock in Project Region Aboriginal communities is publicly funded. Limited financial resources mean that many of these communities experience difficulty providing sufficient levels of quality housing for their residents. As a result, housing represents one of the most critical areas of community needs in these and other Northern Aboriginal communities (Manitoba Family Services and Housing 2001).

Based on INAC's 2001/2002 First Nation Community Profiles, there are an average of four to six people living in private dwellings in Project Region First Nation communities. Interview data from Nelson House suggest that this number may actually be higher – using this same source, Nelson House homes house an average of six people, but interviews suggest an average of 8 to 10 people per home is typical and there are cases of up to 17 people living in one household (NHA, personal communication, 2001; Interview with Health Care Providers 2002). By comparison, in Manitoba there was an average of 3 people per home in 2001 (Statistics Canada 2001).

In terms of housing quality, data from the 1996 Census of Canada, indicate that, on average, 36 per cent of housing in Project Region First Nation communities required major repairs. Only one First Nation community in the Project Region had no homes requiring major repairs; the remainder had between 22 and 51 per cent of homes requiring major repairs. By comparison, in 1996, only 11 per cent of homes in Manitoba required major repairs.

Although similar data were not available for Northern Affairs communities in the Project Region, the results of a recent Northern housing forum suggest that the circumstances are similar in these communities. At this forum, it was noted that the difficulties experienced with Northern housing (availability, quality and age of homes) are prevalent in both First Nation and Northern Affairs communities (Manitoba Family Services and Housing 2001).

Water and Sewer

Aboriginal communities in the Project Region have all or a portion of their homes connected to a piped water and sewer system. Those not connected to the system generally have separate water holding tanks and septic tanks, with trucked service. Two

per cent of homes, most of which are in Cross Lake, have water barrels and no sewage service (INAC 2001).

Electricity

All of the communities in the Project Region, including its Aboriginal communities, have electricity service provided via land lines by Manitoba Hydro (INAC 2001).

4.3.3 Effects and Mitigation

The following outline potential effects of the Project on population, infrastructure and services in Project Region communities outside of the Local Region. Predicted effects are smaller in both scope and magnitude, when compared to those anticipated in the Local Region, and nearly all of these effects will be felt in Thompson during the Project's construction phase.

4.3.3.1 During Construction

During Project construction, effects on infrastructure and services in communities outside of the Local Region will almost entirely be felt in the City of Thompson. Sources of effects on infrastructure and services in Thompson, include:

- In-migration of a small number of senior Manitoba Hydro staff and contractors (expected to be less than 10 workers and their families),
- Speculative in-migration of some Aboriginal families from South Indian Lake and other communities, and
- Project construction workers visiting Thompson on evenings/days off (assumed Saturday evenings/Sundays will be off).

It is also possible that NCN members who secure Project construction employment will move their families to Thompson for various reasons. Other seasonal construction workers on the Project are not likely to move their families and live in Thompson for the following reasons:

- Employees can live in a full-service construction camp with room and board paid.
- Peak construction season only occurs during the summer months of May to October.
- The cost of housing and living in Thompson is relatively expensive (especially when compared to the free cost of living in the construction camp).

- Many of the workers are likely to be interested in saving money while working on the Project.

Overall, the in-migration of Manitoba Hydro staff, contractors and possibly NCN Project construction workers is expected to be limited. No strain on mid-to-upper-range housing is anticipated (there are currently over 100 such houses on the market) in Thompson. Services in Thompson, both government and private, have the capacity to handle any additional demands associated with this small population influx.

There is the possibility for some speculative migration into Thompson as a result of the Project. Based on the NCN Opinion Surveys in South Indian Lake (2001) and Winnipeg, a limited number of NCN members and their families from these communities may migrate to Thompson to seek out Project construction employment and to participate in pre-Project training activities. The likelihood and magnitude of Project-related speculative in-migration³⁵ were determined using survey results and indicate the following:

- Between 10 and 35 NCN members and their families (an additional 25 to 120 individuals), mostly from South Indian Lake and some from Winnipeg, may relocate to Thompson as a result of the Project. The majority of NCN members expressing interest in relocating were below the age of 30.
- Training and general job opportunities (including residency requirements) may result in return migration to Nelson House in the order of 15 to 120 individuals and their families (mainly young and about 75 per cent from Thompson) during the early part of the construction phase. This possible movement would likely help to mitigate some of the possible Project-related migration into Thompson. This possible migration of NCN members back to Nelson House is further discussed in Section 4.2.3.1, and depends largely on the final impact management measures implemented by NCN to limit migration effects.

Depending on the final hiring policies for the Project, there may also be some additional speculative in-migration to Thompson of other northern Aboriginals seeking Project construction employment.

³⁵ The NCN Opinion Survey was conducted under the context of future development, and this may have served to somewhat bias the results. The ranges of numbers provided are believed to be exaggerated. The low end of the range is thought to be a more realistic representation, while the upper end of the range is thought to be exceedingly high. These numbers have also been rounded to the nearest five.

Speculative in-migration related to the Project has the potential to strain the already limited affordable housing available in Thompson (especially townhouses, apartments, rental housing and trailers). At present, there is virtually no capacity in this area, with a very low vacancy rate for apartments in the City. Speculative in-migration may also strain some local social services, particularly those already near capacity like Day Care, social assistance and emergency social services.

To discourage Project-related speculative migration into Thompson, the job order process will be advertised throughout Manitoba and, especially, in the North. Advertisements will indicate that individuals interested in Project employment can register from their home community in the Project's employment database, likely to be through Manitoba Advanced Education and Training (AET) (i.e., they can register and be considered for Project employment even if there is not a Project employment referral agency in their community). Residency in a community close to the Project site will not improve one's chances of securing Project employment. It is thought that making people aware of these details will decrease interest in moving to Thompson for possible Project employment.

Due to the close proximity (45 kilometres) of Thompson to the Wuskwatim construction camp, it is expected that a number of workers will visit Thompson on their evenings/day off (assumed to be Saturday evening and Sunday) and possibly on weekday evenings, although to a lesser degree. In particular, Saturday night is expected to see the largest influx of workers into the City, as Project workers will have Sundays off. The magnitude of this influx will vary according to season and year of construction. It will be greatest during Stage 2 of construction when the peak workforce reaches 540 workers. Thompson businesses that provide services to workers (e.g., restaurants, lounges, bars, movie theatres, stores) are considered the most likely to benefit from this influx. The increased demand is not expected to be large enough to warrant new developments in these areas. However, it could require businesses to retain more staff and this has the potential to affect the current shortage of entry-level labour in the community.

This possibly large influx of workers at specific times may also put some additional strain on policing and emergency services (e.g., roads, accidents, bar-related disturbances and sexual harassment) in the community. This effect is expected to be minimal and restricted to specific time periods (e.g., Saturday nights).

The construction camp itself is expected to have its own ambulance and nurse, as well as fire-fighting capability. However, limited additional demand may be expected at the

Thompson Hospital emergency room due to industrial accidents or other emergencies. In addition, medical services unavailable at the camp (e.g., physician services) may see very limited additional demand due to the presence of the camp population.

Outside of Thompson and the Local Region, other Aboriginal communities in the Project Region may experience small variations in population change during Project construction as a result of the Project's assumed hiring preference policies and associated northern residency requirement. It is possible that some members may return to these communities to pursue employment opportunities on the Project. This return migration is expected to be very small given the number of jobs available and the available pre-Project training opportunities. Although small, such speculative in-migration may put some strain on housing, which is at or near capacity in most of these communities.

As in Nelson House, there is also a possibility that once employment is secured, Aboriginal residents in Project Region communities may choose to move away from their communities (e.g., to Thompson) for housing, education or other reasons. This may serve to offset any in-migration effects.

4.3.3.2 During Operations

During the operations phase, effects on infrastructure and services in Thompson will be very minimal given the limited employment at the site (about three or four technicians and two utility workers). Even if all of the operations workers were to move to Thompson with their families, it would not equate to more than 25 to 30 people moving into the community. Thompson's infrastructure and services have ample capacity to absorb this number of people.

It is possible that a small number of Project construction workers who are northern residents, particularly northern Aboriginal residents, may move their families to Thompson during or following Project construction for various reasons (e.g., employment opportunities, better housing, services, available educational opportunities). This is expected to have minimal, if any, effect during either construction or operation phases as most Project workers are anticipated to move with sufficient financial resources not to strain local Thompson infrastructure or services.

Some of those who speculatively migrate to Thompson during the construction phase may also stay in Thompson even after construction is complete for various reasons (e.g., other available employment and training opportunities). These individuals could continue to put some strain on available social services and the limited supply of affordable housing.

Limited employment opportunities mean that no effects are anticipated on infrastructure and services in Project Region Aboriginal communities (outside of the Local Region), during the Project's operations phase.

4.3.4 Cumulative Effects

As noted in Section 2.2.7, there are a number of proposed projects that could have effects on infrastructure and services in the Project Region, which overlap with those predicted for the Project.³⁶

The Wuskwatim Transmission Project (which will occur concurrently with Project construction) is not likely to generate any additional population changes in Thompson or other communities outside of the Local Region. However, Thompson businesses that provide services to construction workers (e.g., hotels, restaurants, bars, recreation facilities) may experience some additional demand as workers constructing the proposed Birchtree Station (just south of Thompson) are likely to stay in the community.

Based on current planning, the Notigi Project will not start construction until after 2009, when Project construction has come to an end. The relatively small size of the Notigi Project means that it is not likely to generate additional migration into Thompson or other Project Region communities. However, the proximity of Notigi to Thompson and the presence of the Notigi workforce could continue to generate demand for Thompson businesses that provide retail, hospitality and recreational services for workers.

The Gull/Keeyask Generating Station, which could start construction as early as 2007, has a peak construction workforce (an estimated 1,500 workers) large enough to cause population increases in Thompson and other Aboriginal communities in the Project Region. It is likely that most individuals who move to the region in anticipation of Gull/Keeyask employment will be members returning to one of the four First Nation communities in the vicinity of the Gull/Keeyask Generating Station - Tataskweyak Cree Nation, York Factory First Nation, War Lake First Nation and Fox Lake Cree Nation. All four have been actively involved in discussions with Manitoba Hydro about the proposed Gull/Keeyask Generating Station. These communities are likely to receive 75 per cent of pre-Project training dollars that could be available for the Gull/Keeyask Project, which will begin to draw members home prior to the start of construction. At this stage, it is not possible to predict the full extent of return migration to these four communities as a result

³⁶ Section 2.2.7 provides full details on the approach and methodology for assessing cumulative effects and the future projects and activities included as part of the cumulative effects assessment for this SEIA.

of the Gull/Keeyask Project; however, it is likely that levels of return migration to these communities will be much greater than that anticipated as a result of the Project (which is expected to be negligible). Based on previous experience, this return migration is likely to be young families, with pre-school or grade school age children. Further, these returning families are likely to put a strain on community housing resources, and possibly other educational and social services.

The Gull/Keeyask Project may also generate minimal amounts of return migration to other Aboriginal communities in the Project Region (given that hiring preference policies are likely to be similar to those seen on the Project) and to Thompson. This is expected to be small because of the distance of these communities from the Gull/Keeyask site and the limited amount of pre-Project training opportunities available to other communities, i.e., those beyond the four Gull/Keeyask First Nation communities.

Thompson businesses that provide services to construction workers (e.g., hotels, restaurants, bars, recreational facilities) may also see some additional demand as Gull/Keeyask construction workers may visit the community on their days off.

The Conawapa Project, which will have a large construction workforce and is likely to have hiring preferences for Northern Aboriginals, could also influence return migration to Project Region communities. Depending on when Conawapa construction begins, this effect could overlap with the very small anticipated Project effects in the region's Aboriginal communities. Due to its distance from the Conawapa site (approximately 300 kilometres), Thompson is not likely to experience project-related population changes and associated effects on infrastructure and services. Nor is it likely that Conawapa construction workers will visit Thompson on their days off.

4.3.5 Residual Effects and Significance

This section presents the estimated residual effects of the Project on Infrastructure and Services in Project Region communities. Residual effects incorporate, to the extent possible, cumulative effects noted in Section 4.3.4 and consider the effect of impact management measures that are planned. Based on criteria outlined in Section 2.2.8, the significance of these effects for the community as a whole is assessed, along with the general direction of change (positive, negative or elements of both).

[Table 4.14](#) presents a summary of residual effects and significance of effects (including direction of change – positive or negative) by Project phase. No significant adverse

effects are anticipated with respect to the Project’s socio-economic effects on infrastructure and services in the Project Region.

Table 4.14 Residual Effects and Significance of Effects on Infrastructure and Services of the Project Region

Project Phase	Residual Effects	Project Region Community	Significance ¹
Construction	Strain on infrastructure and services as a result of Project-related in-migration	Thompson	Minor (-) (Not Significant)
		Other Project Region Communities	Negligible (-) (Not Significant)
	Effects of workers visiting Thompson	Thompson	Minor (-) (Not Significant) (and restricted to specific time periods)
Operations – NO RESIDUAL EFFECTS			

Note:

1 - See Section 2.2.8 for definitions adopted for this assessment.

During construction of the Project, residual effects on infrastructure and services in communities outside of the Local Region are expected to minimal (not significant) in Thompson and negligible (insignificant) in other Project Region Aboriginal communities. As in the Local Region, the difficulties associated with predicting migration mean that monitoring and follow-up measures will be important in the City of Thompson (see Section 4.3.6 below).

In Thompson, it is anticipated that a small number of senior Manitoba Hydro staff and contractors (less than ten) and possibly some Project workers from Nelson House, along with their families, will move to the community. This is not expected to affect mid-to-upper-range housing or available community services.

Thompson may also experience some speculative in-migration (predicted range of 10 to 35 NCN members and their families, and potentially other Northern Aboriginals) as people move to be closer to Project-related training and employment opportunities. Additionally, some NCN members currently resident in Thompson may relocate to Nelson House. Most of these population changes are anticipated to take place during the early part of the construction phase. It is also possible that Thompson may experience a

small amount of additional speculative in-migration as a result of the Gull/Keeyask Generating Station Project, currently planned to start construction in 2007.

Speculative migration into Thompson has the potential to strain the City's already limited affordable housing and may also strain some local social services.

It is expected that a number of Project construction workers will visit Thompson on their evenings/day off (assumed to be Saturday evening and Sunday) and possibly on weekday evenings, although to a lesser degree. This effect will be greatest during Stage 2 of construction when the peak workforce reaches 540 workers, and when construction on the Gull/Keeyask Generating Station Project is set to begin. Thompson businesses that provide services to workers (e.g., restaurants, lounges, bars, movie theatres, stores) are likely to benefit from this influx; however, additional demand could affect the current shortage of entry-level labour in the community. As well, this possibly large influx of workers at specific times may put additional strain on policing and emergency services (e.g., roads, accidents, bar-related disturbances and sexual harassment) in the community. This effect is expected to be minimal and restricted to specific time periods (e.g., Saturday nights).

Although the Project construction camp is expected to have its own ambulance and nurse, as well as fire-fighting capability, limited additional demand may be expected at the Thompson Hospital emergency room due to industrial accidents or other emergencies. As well, medical services unavailable at the camp (e.g., physician services) may see very limited additional demand due to the presence of the camp population.

Outside of Thompson and the Local Region, other Aboriginal communities in the Project Region may experience small variations in population during Project construction as a result of the Project's hiring preference policies and associated northern residency requirement. This effect is expected to be negligible. Possible in-migration related to the Gull/Keeyask Generating Station and/or Conawapa project may start during Stage 2 of Project construction and could overlap with the very small Project-related in-migration seen in Project Region Aboriginal communities.

During the operations phase, residual effects on infrastructure and services in Thompson will be negligible given the limited employment at the site (about three or four technicians and two utility workers). No Project-related effects are anticipated on infrastructure and services in Project Region Aboriginal communities (outside of the Local Region) during this phase.

4.3.6 Monitoring and Follow-up

Monitoring and follow-up measures are only considered to be necessary for the City of Thompson. Here, Manitoba Hydro and NCN will meet, as required, with representatives of the City of Thompson and relevant agencies (e.g., social services, policing, emergency services) to provide information, in advance, about potential in-migration effects. Follow-up contact, to the extent required, will be undertaken.

5.0 PERSONAL, FAMILY AND COMMUNITY LIFE

This section considers effects on people's personal, family and community life. It addresses the socio-economic components set out in Section 6.4.4 of the EIS Guidelines³⁷:

- “a general description of the personal, family and community life of Aboriginal and other communities potentially affected by the project shall be provided, including a population and demographic profile, outdoor recreation and travel, aesthetics, health status and health issues, way of life, culture and spirituality and community cohesion and organization; and
- sufficient detail on the noted items shall be provided to predict the effect of the project on personal, family and community life.”

The lives of individuals, families and communities as a whole are shaped by many factors. There are many ways of looking at these factors, ranging from social indicators of community well-being (City of Calgary, 2000-2002) and quality of life (Northern Manitoba Economic Development Commission, 1993; Quality of Life Research Unit, University of Toronto; Mukherjee, 1989; Shookner, 1997) to a population health approach (Frankish *et al.*, 1996; Health Canada, 1999). What these approaches have in common is an understanding that many things contribute to the quality of people's lives and experiences and the interplay among these factors affects human and social development. Although defined somewhat differently in each case, they generally include economic well-being (e.g., income and employment to meet basic human needs for shelter, food and clothing), physical well-being (e.g., personal health and safety), social well-being (e.g., social supports, family stability) and the environment (particularly important for Aboriginal people who undertake traditional activities). Culture and spirituality are important foundations, in particular for Aboriginal communities. Perspectives of people also play a role in personal, family and community life – perspectives about current circumstances and possibilities for the future. Communities typically plan for improvements in economic activity and standard of living, infrastructure and services, community health and the well-being of residents. Community goals and plans for the future are measures against which communities judge whether the effects of proposals are considered to be positive or negative and the

³⁷ The EIS Guidelines for the Project show this incorrectly as Section 6.3.4.

significance of those effects – i.e., do proposals support or work against a community's vision for their future.

Personal, family and community life can be affected by the accumulated effects of an array of Project-related effects (e.g., physical changes to the land and water; new access to cultural sites). The experience of these changes would vary for individuals, for families and for communities as a whole, depending upon their experience of the effects of the Project. The Project would have the most pronounced effect on the people of the Local Region (NCN members and others at Nelson House and the Northern Affairs community of Nelson House) by virtue of their proximity to the Project, their traditional use of the area around Wuskwatim Lake, and their participation in the Project as a potential partner (including employment and business activities). The community of South Indian Lake (made up primarily of NCN members) also is included in the Local Region, but, due to its distance from the Project, is not expected to experience the same degree of effects as Nelson House. South Indian Lake residents are expected to experience effects mainly through construction phase employment and business opportunities.

In the Project Region, Thompson is expected to see much more limited effects than will Nelson House. Elsewhere in the Project Region, Northern Region, Manitoba and Canada, effects are expected to be limited to participation in construction-phase employment and business opportunities, potentially distributed across many communities, so that the effect on any one community is anticipated to be small. Key person interviews indicate that use of the Local Region is limited beyond NCN members and, to a very limited extent, Thompson residents.

Potential effects of the Project on personal, family and community life in the Local Region could result during the construction phase. These primarily include participation in construction-phase employment and business opportunities, potential associated in-migration to Nelson House (and some potential out-migration), very limited new access to the Wuskwatim Lake area via the access road required for the Project, and physical/biophysical changes to Taskinigup Falls, Wuskwatim Falls, and related work and camp areas traditionally used by NCN. The effects of these changes on people resident in the Local Region are examined in this section.

The City of Thompson is the next closest community to the proposed Project. During the construction phase, effects on community life could result from the community's role as a regional service centre. These include services to workers during days off, some construction-related road and air traffic and services to construction contractors. Effects

could also result from some potential in-migration associated with Project-related economic opportunities. The effects of these changes on people resident in Thompson are examined in this section.

In other communities in the Project Region beyond Thompson, and in the Northern Region and beyond, effects on personal, family and community life from the Project are expected to be typically positive, minor and not suited to detailed assessment in this section addressing the personal, family and community life environment. Two possible links to the project are noted for these other communities:

- Economic effects from construction employment: The main source of effects from the Project for these other communities is limited to some benefits (as reviewed in Section 3) associated with participation in construction-phase employment (and perhaps some business) opportunities distributed across a broad range of communities; no attempt has been made to assess likely employment effects for specific communities, although it is reasonable to assume that such effects in any community will be moderate relative to effects in the Local Region. Without community-specific assessments, it is not considered useful to extend the overall analysis in this section to address personal, family and community life environments in these other communities as they may relate to economic effects during construction.
- Concerns about possible adverse water-related effects during operations: Through the public involvement activities (Volume 2), concerns about possible water-related adverse effects from the Project were also expressed by some residents in Project Region communities (beyond Thompson), particularly with respect to possible biophysical effects of changes in water levels and flows at South Indian Lake or downstream of the Project on the Burntwood-Nelson River system as a result of the Project. Biophysical studies have concluded that water-related effects are not expected to extend beyond the Local Region (noticeable effects are expected to be confined to the area between Early Morning Rapids and Birch Tree Lake) (see Volume 5, Aquatic Environment). Nevertheless, monitoring of potential downstream effects beyond the Local Region is planned to address these concerns. Periodic communication of monitoring results to communities where such concerns were expressed is planned to mitigate such concerns and to provide a basis for prompt action in the event that unpredicted adverse effects do occur. Potential anxiety and

stress related to these concerns will continue to be addressed through public involvement activities, joint consultations with community leaders, and appropriate monitoring which (where this is possible) is planned and carried out with the involvement of the relevant communities. In light of these concerns and the proposed mitigation and monitoring measures, it is not considered useful to extend the overall analysis in this section to address personal, family and community life environments in these other communities as they may relate to concerns about possible adverse water-related effects during operations.

During the operations phase, effects of new road access and physical/biophysical changes to resources in areas traditionally used by residents of the Local Region could result in material changes to personal, family and community life for these residents. In the long term, if NCN takes up the opportunity to participate in ownership of the generating station, use of funds returned from that investment could shape personal, family and community life for NCN in the future. Potential limited new access to the Wuskwatim Lake area may result in limited recreation benefits for Thompson residents during the operations phase. These effects are examined in this section.

5.1 APPROACH AND METHODOLOGY

This section deals with the following topics, derived from Final Guidelines issued by Manitoba and Canada, from experience in previous socio-economic impact assessments of other large-scale projects in Western Canada and from topics considered important to NCN and Manitoba Hydro; consideration was also given to issues raised by the public during the course of public involvement activities:

- Transportation Safety (Local Region and Thompson)
- Outdoor Recreation (Thompson)
- Aesthetics (Local Region)
- Community Health (Local Region)
- Social Well-being, including way of life and community cohesion (Local Region and Thompson)
- Culture, including spirituality (Local Region)
- Community Organization and Governance (Local Region)
- Goals and Plans (Local Region and Thompson).

Note that the population and demographic profile called for under this heading in the Final Guidelines is included in Section 4.

For the Local Region, NCN identified topics that would assist them not only in considering the effects of the Project on their members (as they consider, over the course of 2003, whether to participate as a partner in the proposed development), but also topics that would help to plan for the development, if it were to occur (i.e., to enhance positive effects and mitigate adverse effects). Indeed, some of these measures (as also noted in the Economy and Community Infrastructure and Services sections) have been or are about to be implemented in preparation for the Project.

Analyses undertaken in the Local Region with respect to the Project are more detailed than reflected in this section. This section provides a general level of detail that summarizes the nature and characteristics of anticipated effects of the Project on the Local Region and the City of Thompson, including assessment of significance of these effects. However, evidence from some detailed analyses undertaken for NCN with respect to positive and negative effects on personal, family and community life are considered by them to be confidential and are not reported here.

Analysis of effects of the Project on personal, family and community life, particularly for the Local Region, was guided by the needs of NCN for information. NCN had a number of requirements for analysis that was a focus for the socio-economic impact assessment. Results were used for NCN's own planning and assessment purposes and were also used to contribute to this section.

Analysis of effects on personal, family and community life involved:

- Key Person Interviews: a program of key person interviews (individual and group interviews) was undertaken with residents of Nelson House, South Indian Lake and Thompson to establish an understanding of the existing environment (now and in the future without the Project); to identify issues potentially affected by Project effects; and to discuss potential means to enhance positive effects or mitigate adverse effects. Traditional and local knowledge contributed to the assessment through this method, in addition to the formal program noted below. Where appropriate (e.g., assessment of culture), the process was guided by key NCN members.
- Opinion Surveys: Opinion Surveys of NCN members living at Nelson House, South Indian Lake, Thompson and Winnipeg were undertaken to obtain perspectives of

- members on many topics, including current and future outlook without the Project, positive and negative effects of the Project, priorities in planning for the Project and other topics.
- Community Workshops and Open House: Initial findings of the environmental impact assessment, including results described in this section, were discussed with NCN and input received via workshops with the Future Development Team and the communities as a whole (Nelson House and South Indian Lake [pending] forums). Results were shared with the City of Thompson and input was received via the third round of public involvement (open house December 11, 2002).
 - Community Planning Analysis and Workshops: A series of workshops was undertaken with representatives of community-based organizations in Nelson House to identify key community issues and develop a framework for future planning. This framework will integrate Project-related impact management (enhancement and mitigation) with current community planning. Analysis of current planning documents supported the workshop process.
 - Traditional Knowledge Program: In addition to other methods (e.g., key person interviews, input of NCN members who were employed in field studies, current documentation) a program of interviews was developed and undertaken by NCN staff with NCN Elders and resource harvesters.
 - Statistical Data Sources: Where available, statistical data sources were used. In particular, analysis of health status of NCN members (at Nelson House and, to the extent available, also at South Indian Lake) was undertaken. Analysis of existing traffic levels and future predicted effects used statistical sources of data as well.
 - Available Reference Material: Where available, reference material relevant to the Local Region (e.g., traditional knowledge documentation; historical records) and the City of Thompson (e.g., planning documents) was used to profile the existing environment. In addition, available reference material with respect to key issues and other experience were used in the analysis of effects, potential enhancement/mitigation measures and monitoring.
 - Input from other Analyses in the Environmental Impact Assessment: Conclusions from other key analyses in the environmental impact assessment provide input to assessment of effects on personal, family and community life. Since effects on people “accumulate” from a number of sources of change with which people may come into contact, relevant conclusions from assessment of effects on the physical environment

(e.g., water, ice and debris changes as they affect navigation), the biophysical environment (e.g., water quality changes as they affect human consumption; changes in aquatic and terrestrial resources used by people as they affect changes in health and way of life), economy (e.g., changes in employment and income as they affect social well-being, health and culture) and built environment and community services (e.g., in-migration of population as they affect social well-being and health) are relevant to this section.

5.2 LOCAL REGION

5.2.1 Sources of Effect

Personal, family and community life can be affected by the accumulated effects of a broad range of Project-related effects. Many of these effects flow indirectly through physical, biophysical, economic and population changes.

In the Local Region, sources of effect during the construction phase include:

- participation in construction employment and business opportunities by residents of the Local Region; new income associated with this employment and associated new patterns of work life, including interaction with non-local construction workers in a construction camp at the construction site
- change in resource-based income in the Local Region
- potential in-migration to Nelson House (and most likely some offsetting out-migration), particularly early in the construction period, and potentially prior to construction when training is made available; associated new demand for housing and services
- construction-related traffic
- limited new access to the Wuskwatim Lake area during the construction phase
- physical changes to the landscape as a result of clearing and construction of the access road, camp and work areas, dam and associated works.

In the Local Region, sources of effect during the operations phase include:

- participation in very limited operations employment and contracting opportunities by people residing in the Local Region

- if NCN pursues ownership participation in the Project, eventual return on investment for the benefit of the community
- change in resource-based income in the Local Region
- physical changes to the landscape as a result of operation of the generating station
- changes to water levels and flows, associated debris and water quality on Wuskwatim Lake
- continuing, and potentially greater, new access to the Wuskwatim Lake area and to the south side of the Burntwood River (if access is permitted across the dam).

5.2.2 Existing Environment

In the Local Region, the primarily Aboriginal population resides at the reserve community of Nelson House (NCN members), at the small adjacent Northern Affairs community of Nelson House (mainly NCN members) and at the Northern Affairs community of South Indian Lake. The latter community primarily includes people holding NCN membership; these members have been in the process for some time of applying to create a separate Cree Nation of O-Pipon-Na-Piwin Cree Nation. NCN members continue to use the Nelson House RMA for commercial and domestic resource harvesting, cultural and other reasons.

The following sections characterize personal, family and community life in the Local Region, focusing on those geographic areas and communities where change is anticipated to occur:

- Transportation safety in the area between Nelson House and Opegano Lake, including both water and trail-based transportation, as well as road traffic on PR 391 between Nelson House and Thompson
- Current aesthetic character of the area at and near Taskinigup Falls and Wuskwatim Falls, Wuskwatim Lake and the access road
- Community health status at Nelson House and, to the extent that data are available, at South Indian Lake
- Social well-being at Nelson House
- NCN culture, primarily at Nelson House
- Community organization and governance of NCN at Nelson House
- Goals and plans of NCN at Nelson House.

5.2.2.1 Transportation Safety

Water and Trail-based Navigation and Safety

The following provides an overview of Navigation Safety and Access for areas between Footprint Lake and Birch Tree Lake. The discussion is divided into two sections:

- **Navigation and Access Safety Measures:** Under agreements, licence arrangements and federal legislation, Manitoba Hydro is responsible for mitigating adverse effects from its operations on travel and access along affected waterways. The 1996 NFA Implementation Agreement (which implements the Northern Flood Agreement of 1977 for NCN³⁸) contains a number of safety provisions to be undertaken by Manitoba Hydro to assure safe travel along affected waterways in the Nelson House Resource Management Area (RMA). The 1996 NFA Implementation Agreement also established a claims mechanism through the NCN Trust. These safety provisions are associated with safe ice trails, water level forecast notices, navigational aids and debris management. Additional safety measures are implemented through the Manitoba Hydro Corporate Debris Management Program (DMP).
- **Local Navigation:** Information on open water, ice conditions and land-based trails for these areas was collected through key person interviews with Nelson House commercial resource harvesters that travel these waterways and trails frequently, other local residents familiar with these waterways and Project researchers conducting studies in these areas. Results of the 2000 NCN Opinion Survey were also used to determine how frequently local residents travelled these waterways during 1999/2000, and the types of navigational problems encountered.

Navigation and Access Safety Measures

Under agreements, license arrangements and federal legislation, Manitoba Hydro is responsible for mitigating adverse effects from its operations on travel and access along affected waterways.

Manitoba Hydro has developed and implemented various programs and measures to address safe travel on affected waterways in First Nation resource management areas.

³⁸ Both the NFA and the 1996 NFA Implementation Agreement contain internal dispute resolution provisions

These measures are designed to assist local residents using the affected waterways for navigation, trapping, snowmobiling and other purposes.

Water and trail-based navigation and safety measures are designed to mitigate adverse effects of Hydro operations on travel in the affected First Nation resource management areas. Safety measures pursuant to the 1996 NFA Implementation Agreement and through Manitoba Hydro's DMP include such measures as safe ice trails, navigational aids, portage maintenance, a personal property damage claims process, debris management and boat patrols.

There are safe travel measures pertaining specifically to the Nelson House Resource Management Area (RMA) listed in the 1996 NFA Implementation Agreement. The 1996 NFA Implementation Agreement provides a number of safety provisions to be implemented by Manitoba Hydro to ensure safe travel along affected waterways in the Nelson House RMA, as well as a claims mechanism established through the NCN Trust.

Manitoba Hydro's DMP addresses debris management on a systematic and system-wide basis. Core objectives of the DMP include accommodating various safe public uses of the affected waterways, responding to specific shoreline access needs of waterway users, and protecting public and private infrastructure. DMP activities are carried out on waterways where Manitoba Hydro's operations have resulted in additional debris on the waterway.

DMP activities are divided into two main categories: boat patrols and site specific debris management. Boat patrols travel defined routes and remove floating debris that poses a navigational hazard. Debris management crews address site specific debris-related issues along the shoreline of waterways affected by Manitoba Hydro. These can include restoring access to traditional use areas, infrastructure protection and environmental enhancement. DMP activities are selected in consultation with local communities and First Nations. Residents of local communities and First Nations are hired to manage and perform the work.

In the Local Region, boat patrols under the DMP consist of two Manitoba Hydro employees (NCN community members) travelling established routes along affected waterways on a regular basis within the Nelson House RMA.

The primary objectives of the DMP boat patrols are to:

- Ensure public safety

- Ensure continued compliance with statutory, licensing and contractual requirements
- Meet resource users' needs
- Protect and enhance environmentally sensitive areas, and
- Protect public and private infrastructure.

Specific activities of the DMP boat patrols include:

- Area-specific removal of floating debris hazards (i.e., deadheads)
- Conducting limited, site-specific shoreline debris removal (the majority of this work is contracted to NCN, see below)
- Communicating with resource users to identify their resource use patterns and any debris-related adverse effects, and
- Assisting waterway travellers in emergency situations

(Manitoba Hydro Mitigation Dept. – Thompson office, personal communication, 2002).

Manitoba Hydro contracts NCN members to install and maintain mid-channel directional markers on specified waterways as navigational aids (Manitoba Hydro Mitigation Dept. – Thompson office, personal communication, 2002). These measures only apply to previously agreed upon routes that are frequently travelled within the RMA, as stipulated in the 1996 NFA Implementation Agreement. These routes extend from Footprint Lake north to Osik Lake and south to Threepoint Lake. From Threepoint Lake there are three alternate safe water routes extending northwest to Wapisu Lake, south along the Burntwood River towards Wimapedi Lake and southeast along the Burntwood River into the north end of Wuskwatim Lake (NFA Implementation Agreement 1996).

Under the 1996 NFA Implementation Agreement, Manitoba Hydro is also responsible for:

- Maintaining four foot by eight foot signs warning of rapids or falls between Footprint Lake and Wuskwatim Lake, at reasonably visible locations on both banks of the Burntwood River
- Supplying and installing flashing amber lights at each end of both the God's Rapids and Early Morning Rapids portages (NFA Implementation Agreement 1996).

In terms of shoreline debris clearing (undertaken within the last three years), there were about 50 shoreline clearing contracts awarded each year to NCN members with funding

provided by Manitoba Hydro. High use areas such as cabins and commonly used water routes were targeted. The debris was then piled above the high water mark and burned in the winter.

Water level forecast notices are provided by Manitoba Hydro to ensure community members are aware of projected flow conditions. A 60-day forecast outlining the anticipated water levels on Footprint Lake is provided on a monthly basis to the community. A letter describing anticipated water levels and a graph are sent to the Cree Nation Council with copies to other key individuals in the community on a monthly basis. Arrangements are also made to broadcast the information in both English and Cree for a four-day period on Thompson Radio CHTM and on the local Nelson House television station.

The accumulation of debris and shoreline erosion can affect safe use and access to portages. Under the 1996 NFA Implementation Agreement, Manitoba Hydro is responsible for maintaining the existing portages at God's Rapids and Early Morning Rapids to accommodate the normal travel requirements of NCN members (NFA Implementation Agreement 1996). All monitoring and maintenance work on the portages at God's Rapids and Early Morning Rapids is contracted to NCN members by Manitoba Hydro (Manitoba Hydro Mitigation Dept. – Thompson office, personal communication, 2002).

Under the 1996 NFA Implementation Agreement, there are a number of safety provisions established for Manitoba Hydro to provide safe ice trails within the Nelson House RMA during winter ice conditions. Designated routes extend from Footprint Lake north to Osik Lake, east to Wapisu Lake and south through Threepoint Lake and along the Burntwood River towards Wimapedi Lake. Where applicable, the safety measures along these ice crossings and main trails are intended to include:

- Preparing, marking and maintaining ice crossings and main trails
- Monitoring the safety of ice crossings during the winter
- Posting notices for changing ice conditions and vehicle load limits
- Conducting annual public meetings to provide information to NCN members on safe use of ice crossings
- Removing debris at shoreline locations where winter ice trails intersect, and
- Providing snow fencing and related safety reflectors to restrict access to Footprint Lake due to unsafe ice conditions (NFA Implementation Agreement 1996).

Manitoba Hydro has contracted NCN members to mark, monitor and maintain safe ice trails in the Nelson House RMA (Manitoba Hydro Mitigation office – Thompson office, personal communication, 2002).

Personal Property Damage and Death or Injury Claims

Under the 1996 NFA Implementation Agreement, a claims mechanism was established through the NCN Trust office, whereby NCN members can file claims for personal or property injury incurred while navigating on land, ice or water. During the time period from 1996 to 2001, there were 57 claims. Some claims remain unsettled. Most accidents have tended to occur along the stretch of the Burntwood River between Wetigo Rapids and Early Morning Rapids (NCN Resource Programs staff, personal communication, 2002).

Manitoba Hydro is responsible for claims originating from personal injury and death, past and future, caused by or attributable to the Churchill River Diversion Project (NFA Implementation Agreement 1996).

Local Navigation

Open Water Navigation

As part of the 2000 NCN Opinion Survey, NCN members were asked about the types of navigational problems encountered in the Local Region. Debris was the most common response, followed by stumps, low-water levels, unnoticeable markers and whirlpools. Several respondents also identified the lack of landing sites, green algae, erosion and reefs as additional navigational problems (NCN Opinion Survey 2000). This is consistent with comments heard during interviews with resource harvesters in the local area who use these waterways. Based on these interviews, the primary navigation safety and access issues during open water conditions relate to the existence of rapids and floating debris between Footprint and Birch Tree lakes.

NCN members regularly use the waterways between Footprint Lake and Threepoint Lake and as far east as Wetigo Rapids or Kinosaskaw Rapids (see [Figure 5.1](#)) for fishing, hunting (waterfowl, moose, etc.), berry picking and other uses (NCN Resource Programs staff, personal communication, 2002). According to the 2000 NCN Opinion Survey, approximately half of NCN members living in Nelson House had travelled on Footprint Lake during 1999/2000, and approximately one-third had travelled on Threepoint Lake.

Other high use areas for NCN members included the Rat River (36 per cent of NCN residents) and the Burntwood River (26 per cent of NCN residents).

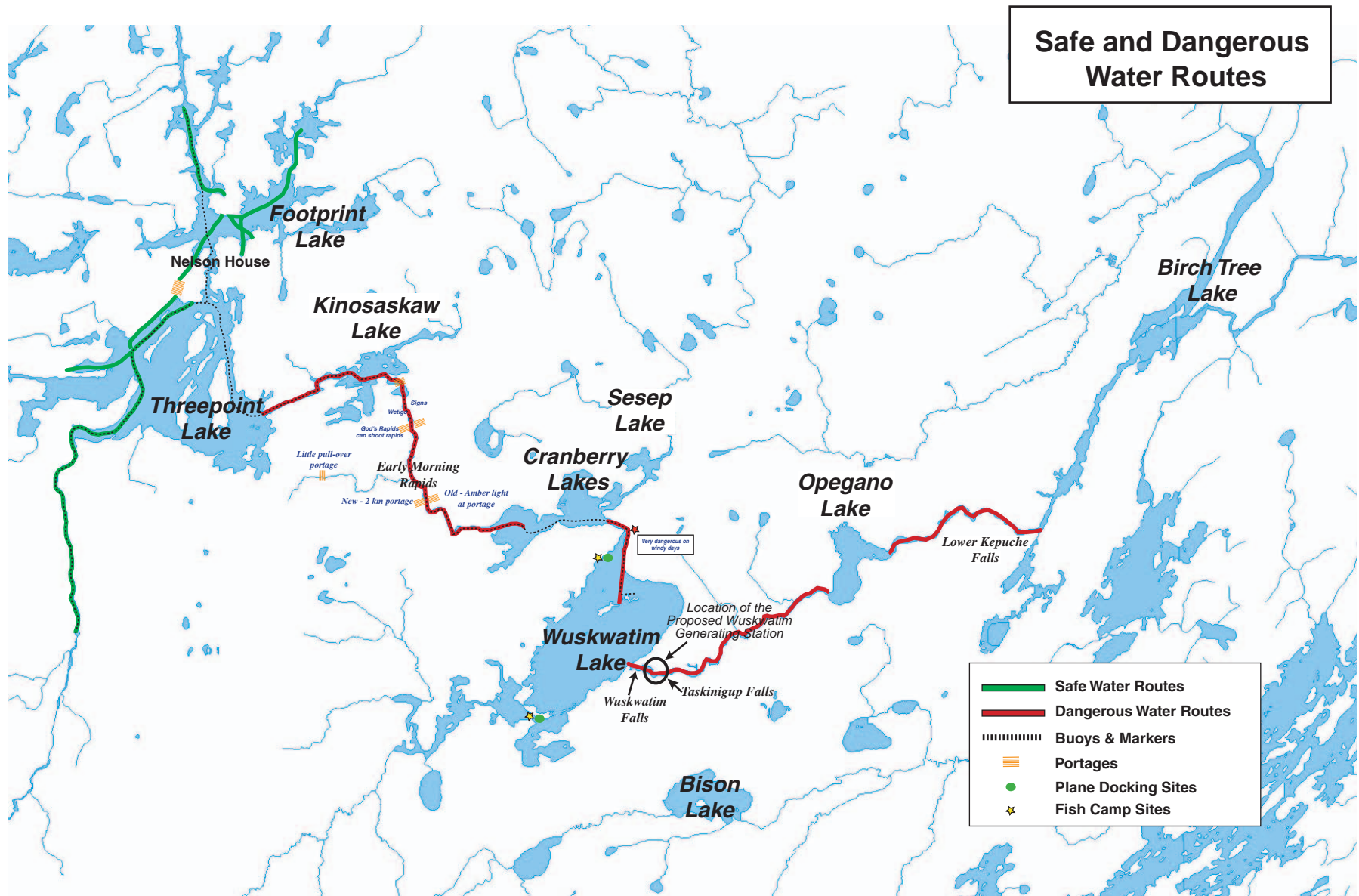
Under open water conditions, there is only a very small amount of travel beyond Threepoint Lake to Wuskwatim Lake. The stretch of the Burntwood River between Threepoint Lake and Birch Tree Lake is reported by NCN members to have strong currents, much debris and is generally considered unsafe for travel. During a workshop with commercial resource harvesters, it was noted that travel is difficult along this stretch of the Burntwood River for a variety of reasons:

- Fluctuations in water levels along the Burntwood River when boating down from Nelson House.
- Problems arise from water level fluctuations. High water will pick up more debris from the shore, create floating islands and increase the amount of erosion. If the water level is low, then deadheads become exposed as well as submerged islands.
- Debris along the shoreline creates a hazard when a safe place is needed to land a boat during adverse weather conditions or attempting to hunt animals along the shore.
- Debris problems are often worsened by the direction and strength of currents and winds (NCN commercial harvesters, personal communication, 2002).

People travelling beyond Threepoint Lake to Wuskwatim Lake do have access to portages maintained by Manitoba Hydro at God's Rapids and Early Morning Rapids (NCN commercial harvesters, personal communication, 2002). Further details are available in [Volume 7: Section 2.3.2 Access, Cabins, and Camping](#).

As a result of dangerous conditions, most people who travel along this waterway are accompanied by a guide that has extensive knowledge and experience with this route. There are about ten to fifteen NCN members that know this route well, and serve as guides to take people down the river to Wuskwatim Lake (NCN Resource Programs staff, personal communication, 2002).

Figure 5.1 Open Water Navigation



Source: Developed by InterGroup Consultants Ltd. in consultation with NCN Resource Users and NCN Resource Program Staff.

Typically, there are approximately six commercial fishermen and a few additional moose hunters in the fall season that travel the entire distance from Nelson House to Wuskwatim Lake (NCN Resource Programs staff, personal communication, 2002). Generally, commercial fishermen fish Wuskwatim Lake during June and September; however, there has been no commercial fishing at Wuskwatim Lake since 1999 (NCN commercial harvesters, personal communication, 2002).

Wuskwatim Lake itself has low to medium debris densities and is often subject to strong winds, fast currents and a lot of wave action. According to Nelson House residents, winds also tend to stir up debris and sediment making travel on the lake more dangerous. NCN members working with North/South Consultants Inc. have marked many of the navigational hazards such as reefs and rocks on Wuskwatim Lake. This task is performed annually as the markers are lost over the winter season (NCN Resource Programs staff and North/South Consultants Inc. staff, personal communication, 2002). Other navigation difficulties on the lake include considerable erosion, lack of anchor stones for landing boats and setting nets, and water level fluctuations (NCN commercial harvesters, personal communication, 2002).

Some people use float planes to access the Wuskwatim area, and typically dock at the south end of the lake, where the main fish camp is located. There is also a dock at the north end of the lake, but landings here are more difficult, especially when winds are from the south or east. In some cases, these planes are also used to transport commercial fishing catches from the lake, as it is not possible to transport large catches by boat through the portages on the way back to Nelson House. On occasion, hunters will also fly into Wuskwatim Lake in the fall to hunt for moose (North/South Consultants Inc. staff, personal communication, 2002; and NCN commercial harvesters, personal communication, 2002).

In addition to resource harvesting, there are also a number of sites along the shores of Wuskwatim Lake that attract visitors. These include fish camps located at the north and south ends of the lake, a ceremonial site (well inland but accessible from Wuskwatim Lake), the old community site located at the north end and a number of gravesites (see [Volume 9](#), Heritage Resources). Site ceremonies have also been held at Wuskwatim Lake by NCN members during 2000 and 2001. Most of the members that attended these ceremonies were transported from Nelson House to the Wuskwatim Lake site by float plane.

Very few people travel beyond Wuskwatim Lake to Opegano Lake and Birch Tree Lake. The route is extremely dangerous, and is used infrequently principally because of the need to bypass Wuskwatim Falls and Taskinigup Falls. No facilities exist to assist with portaging these falls, and consequently there is no easy way to pass by them to access Opegano Lake (North/South Consultants Inc. staff, personal communication, 2001). There is a trail that bypasses the falls, but this trail is accessed a considerable distance north of the falls along the east shore of the river. The trail, although upgraded in the late 1990s to service survey camps operating in the area, is long and would be very difficult to use for portaging a boat (North/South Consultants Inc. staff, personal communication, 2002).

Some Thompson residents use Birch Tree Lake and sections of the Burntwood River as far west as Kepuche Falls for fishing, boating and recreational purposes. Typically these residents do not attempt to pass Kepuche Falls in order to access Opegano Lake (Manitoba Hydro Mitigation Dept. – Thompson office, personal communication, 2002).

Ice Conditions Navigation

During the winter months under stable ice conditions, NCN members most frequently use Footprint Lake and Threepoint Lake for snowmobiling and ice fishing. There are safe ice trails on both Footprint and Threepoint Lakes which extend north to Osik Lake, east to Wapisu Lake and south along the Burntwood River (see Figure 5.2). The safe ice trails allow NCN members to access frequently visited sites and cabins, practice traditional resource harvesting activities and have a safer means of winter travel (NCN Resource Programs staff, personal communication, 2002).

There are also other winter ice trails that are not covered under the safe ice travel measures implemented through the 1996 NFA Implementation Agreement. Typically, these trails are less frequently travelled and used by trappers. These trails extend to Threepoint Lake, Kinossaskaw Lake, Cranberry Lakes, Wuskwatim Lake, Opanahaskose Lake and Bison Lake (NCN Resource Programs staff, personal communication, 2002).

As in the summer, the waterways between Threepoint Lake and Wuskwatim Lake are not frequently used in the winter. These areas have been identified as having intermittent or weak ice cover, including areas of border ice³⁹ (e.g., God's Rapids), anchor ice⁴⁰ (e.g., God's Rapids), open water (e.g., downstream of Upper Caribou Rapids) and hanging ice

³⁹ Border ice forms along the shoreline of a river, extending out into the centre. It will grow throughout the winter and may cover the entire width of the river (depending on the river velocity and geometry).

⁴⁰ Anchor ice typically forms in areas of shallow and rapidly flowing water (i.e., rapids).

dams⁴¹ (e.g., Early Morning Rapids). Each of these ice conditions creates serious navigation and safety concerns in these areas. Wuskwatim Lake has solid lake ice⁴² (Volume 4).

NCN commercial harvesters (trappers and fishermen) expressed several concerns relating to navigation and access during winter ice conditions between Footprint Lake and Birch Tree Lake, including:

- Creeks that used to freeze solid prior to the Churchill River Diversion (CRD) now have unstable ice.
- Potentially hazardous areas on the trails to their traplines caused by slush, weak ice, hanging ice (air pockets under the ice) and at times open water.
- The old Wabowden snowmobile trail is very difficult to traverse now due to uncertain ice conditions in some of the smaller creeks caused by the CRD.

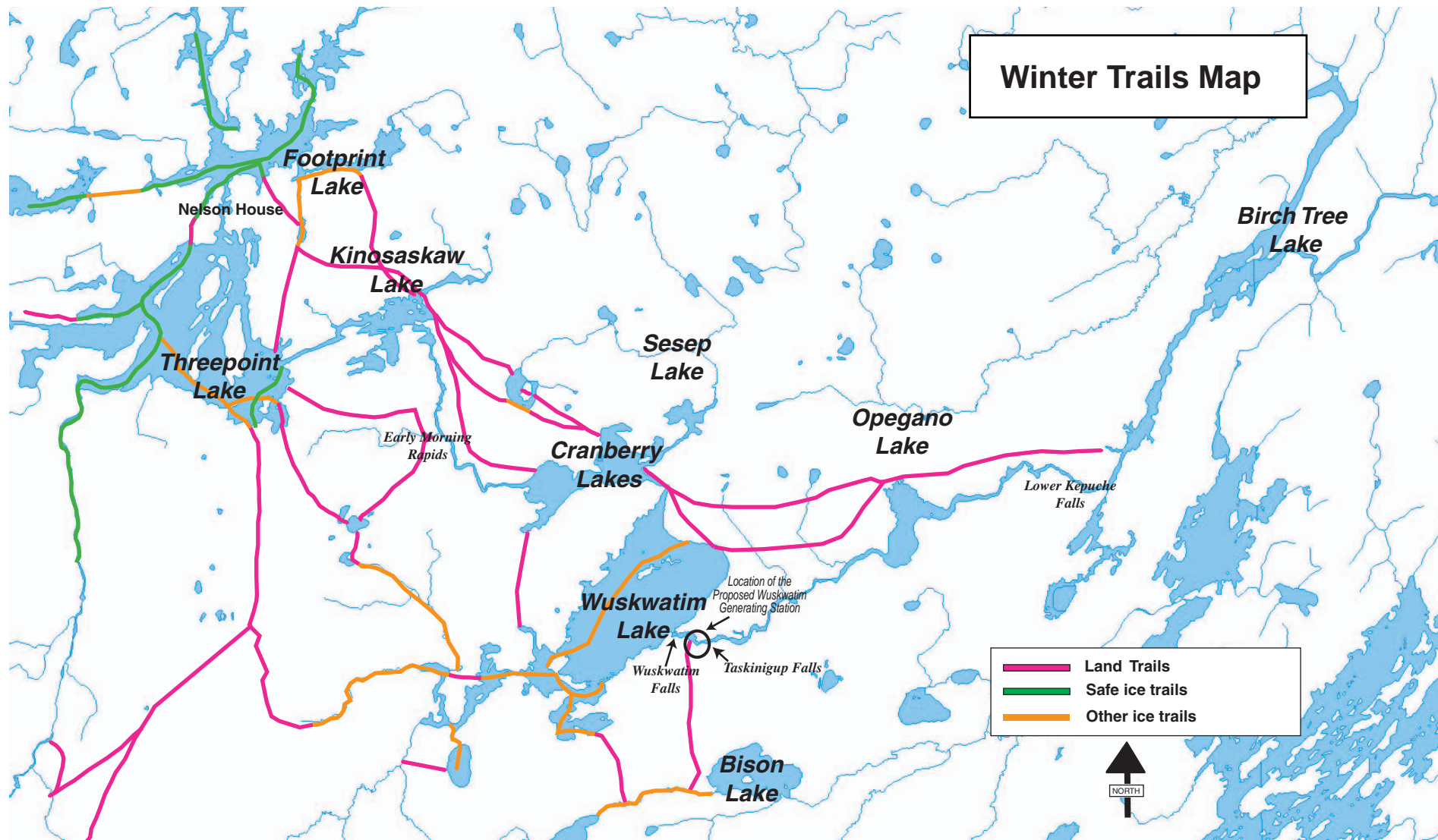
All of the navigation safety and access problems are said to result in more personal danger, longer travel times and increased costs (e.g., accidents, difficulty transporting catches) during resource harvesting activities (NCN commercial harvesters, personal communication, 2002).

Further downstream, there is some use of Birch Tree Lake and the adjoining sections of the Burntwood River by Thompson residents for snowmobiling, ice fishing and recreational purposes (Manitoba Hydro Mitigation Dept. – Thompson office, personal communication, 2002).

⁴¹ Hanging ice dams are formed when river velocities are too high and ice accumulates under the ice cover. This can result in a substantial rise in water levels due to the local thickening of ice and blockage of the river.

⁴² Lake ice forms on very low velocity lakes. Lake ice thickness is primarily governed by winter air temperatures and depth of snow cover.

Figure 5.2 Ice Crossing and Main Trails



Source: Developed by InterGroup Consultants Ltd. in consultation with NCN Resource Users and NCN Resource Programs Staff. Safe Ice Trails shown are those specified in the 1996 NFA Implementation Agreement.

Land-based Navigation and Safety

There are a number of land-based trails in the Local Region surrounding the Nelson House community. NCN members continue to use these trails for traditional resource harvesting activities (fishing, hunting, berry picking, etc.).

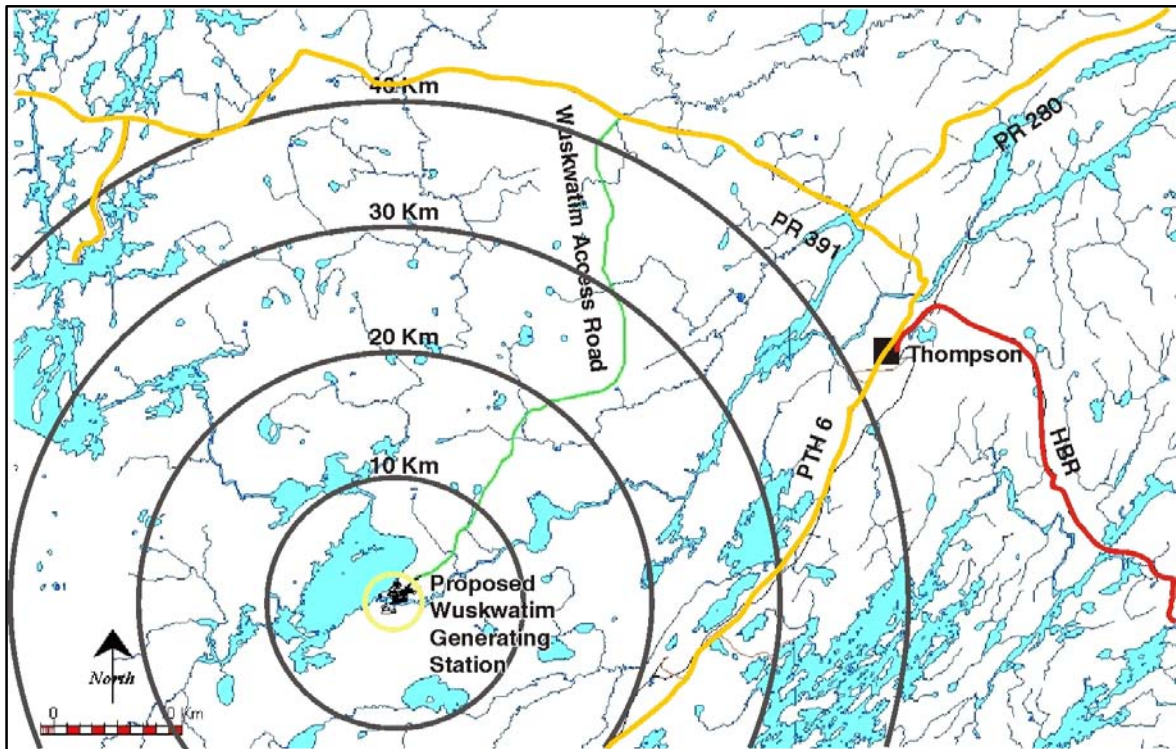
Typically, the trails are used to gain access to lakes in the area, including Footprint Lake, Threepoint Lake, Kinosaskaw Lake, Cranberry Lakes, Wuskwatim Lake, Opanahaskoe Lake, Opegano Lake and Bison Lake (see Figure 5.2). The land-based trails are also used to connect sections of ice trails located on some of these lakes. The trails are used by snowmobiles in the winter and all-terrain vehicles in the summer.

Road Traffic and Safety

Provincial Road (PR) 391 links Nelson House to Thompson (to the southeast), and Leaf Rapids/Lynn Lake (to the northwest) (see Figure 5.3). PR 391 is a two-lane secondary arterial road route, with a posted speed limit of 90 kilometres per hour. The road is seal-coated for the 30 kilometre section located immediately west of Thompson, gravel surfaced for the next 25 kilometres, and again seal-coated for the last stretch of the road which ends at the Nelson House road turnoff (ND Lea 2002).

In Manitoba, highways under the control of Manitoba Transportation and Government Services (MTGS) are classified as RTAC Routes, Class A1 or Class B1 Highways. The classification of a particular highway segment is set according to axle loading and gross vehicle weight capacity. The segment of PR 391 between Thompson and Nelson House, the section of the road relevant to this study, is recognized by MTGS as a seasonal RTAC roadway. This means that between December 1 and the last day of February, gross vehicle weights of 62.5 tonnes are permitted on the roadway. During the remainder of the year, vehicle weights are restricted to 55 tonnes (ND Lea 2002).

Figure 5.3 Site Location in Relation to PR 391



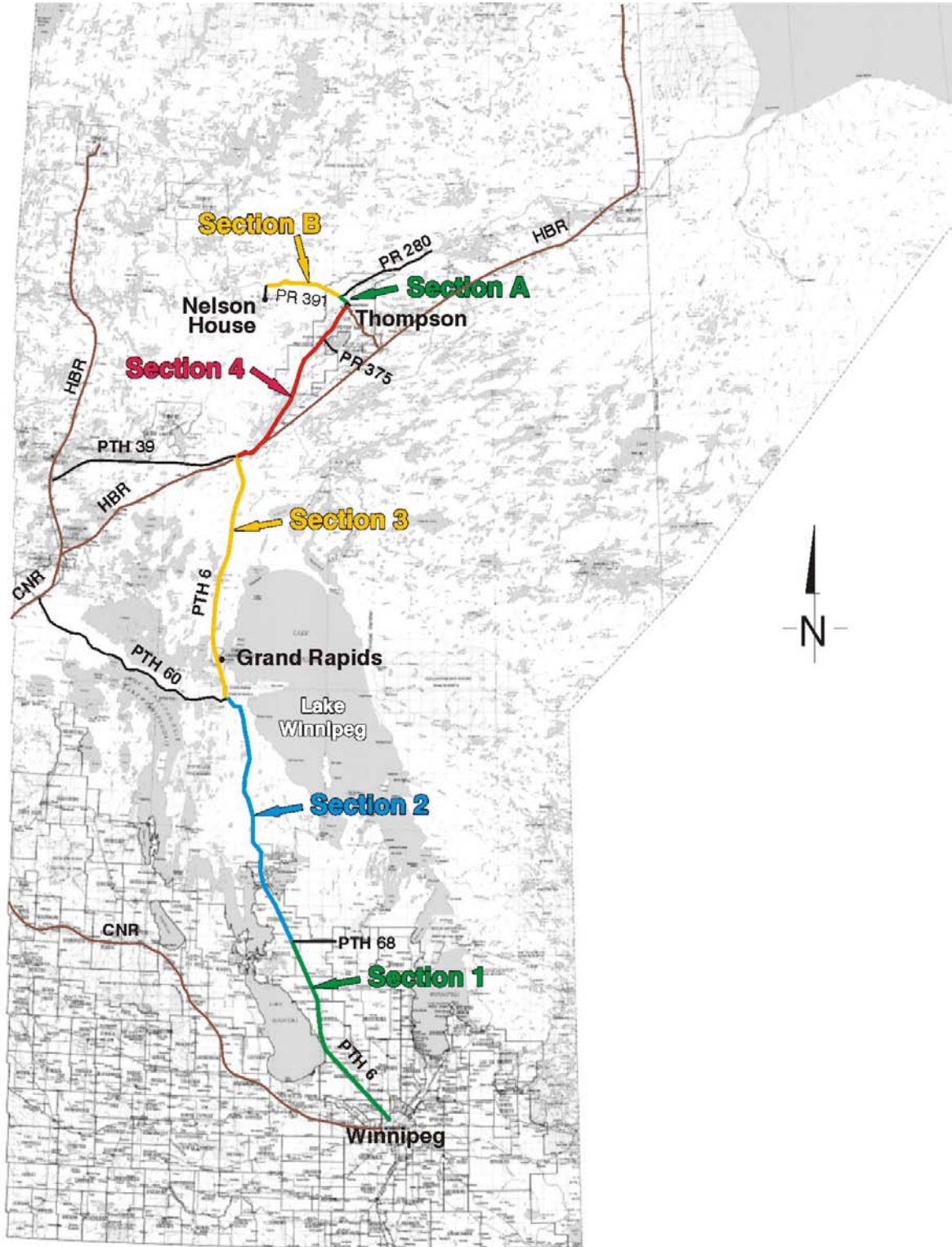
Source: ND LEA Engineers & Planners Inc.

Table 5.1 below highlights traffic volumes, as well as accident rates, for two sections of PR 391 (see Figure 5.4):

- Section A: Between the Burntwood River Bridge at the north edge of Thompson to the PR 280 turnoff, and
- Section B: Between the turnoff to PR 280 and the Nelson House access road.

Data included in this table were obtained from the University of Manitoba Transport Information Group (UMTIG). The table indicates that the accident rates for Sections ‘A’ and ‘B’ of PR 391 were 1.8 and 1.2 accidents per million vehicle kilometres (MVK), respectively (ND Lea 2002).

Figure 5.4 Traffic Review Sections



Source: ND LEA Engineers & Planners Inc.

Table 5.1 PR 391 Traffic Volumes and Accident Rates: 2000

Highway	Section	Average 2000 AADT ³	AADTT ⁴ (Truck %)	ASDT ⁵	# of Accidents (2000)	Accidents / Million vehicle-km
PR 391 (excl. Thompson)	A ¹	775	55 (7.0%)	935	5	1.77
	B ²	425	65 (15%)	525	12	1.21

Source: ND LEA, 2002.

Notes:

- 1 - Section 'A' applies to the stretch of PR 391 between the Burntwood River Bridge at the north end of Thompson and the turnoff to PR 280.
- 2 - Section 'B' applies to the stretch of PR 391 between the turnoff to PR 280 and the Nelson House access road.
- 3 - AADT = Average Annual Daily Traffic (vehicles/day).
- 4 - AADTT = Average Annual Daily Truck Traffic (trucks/day).
- 5 - ASDT = Average Summer Daily Traffic (vehicles/day).

Table 5.2 below outlines use of PR 391 between Thompson and the Nelson House access road by means of vehicle classification. The table highlights the distribution of various vehicle types on the road as calculated over a two-day period in June, 1997. The location of the vehicle count was at the intersection of PR 391 and the access road to Nelson House. It is assumed that the count can be applied to the entire stretch of road east to Thompson. Some caution should be used, however, in applying this count to Section A of PR 391, due to the concentration of airport related traffic along this 10-kilometre stretch. In Manitoba, the Federal Highway Administration (FHWA) Vehicle Classification System is used.

Table 5.2 PR 391 Vehicle Classifications: 1997

Classification	Description	14-Hour Avg. Volume	%
1	Motorcycles	0	0
2	Passenger Cars	80	25.6
3	Other 2-axle, 4-tire, single-unit	182	58.1
4	Buses	2	0.6
5	2-axle, six-tire, single-unit trucks	7	2.2
6	3-axle, single-unit trucks	4	1.3
7	4-or-more-axle, single-unit trucks	0	0
8	4-or-less-axle, single trailer trucks	0	0
9	5-axle, single trailer trucks	20	6.4
10	6-or-more-axle, single trailer trucks	7	2.2
11	5-or-less, multi-trailer trucks	0	0
12	6-axle, multi-trailer trucks	0	0
13	7-or-more axle, multi-trailer trucks	1	0.3
14	Other	10	3.2
TOTAL		313	99.9

Source:

- 1 - The total counts included in this table were completed by Manitoba Transport and Government Services on June 16 and 17 1997. Data obtained from UMTIG. Table from ND Lea 2002.

Notes:

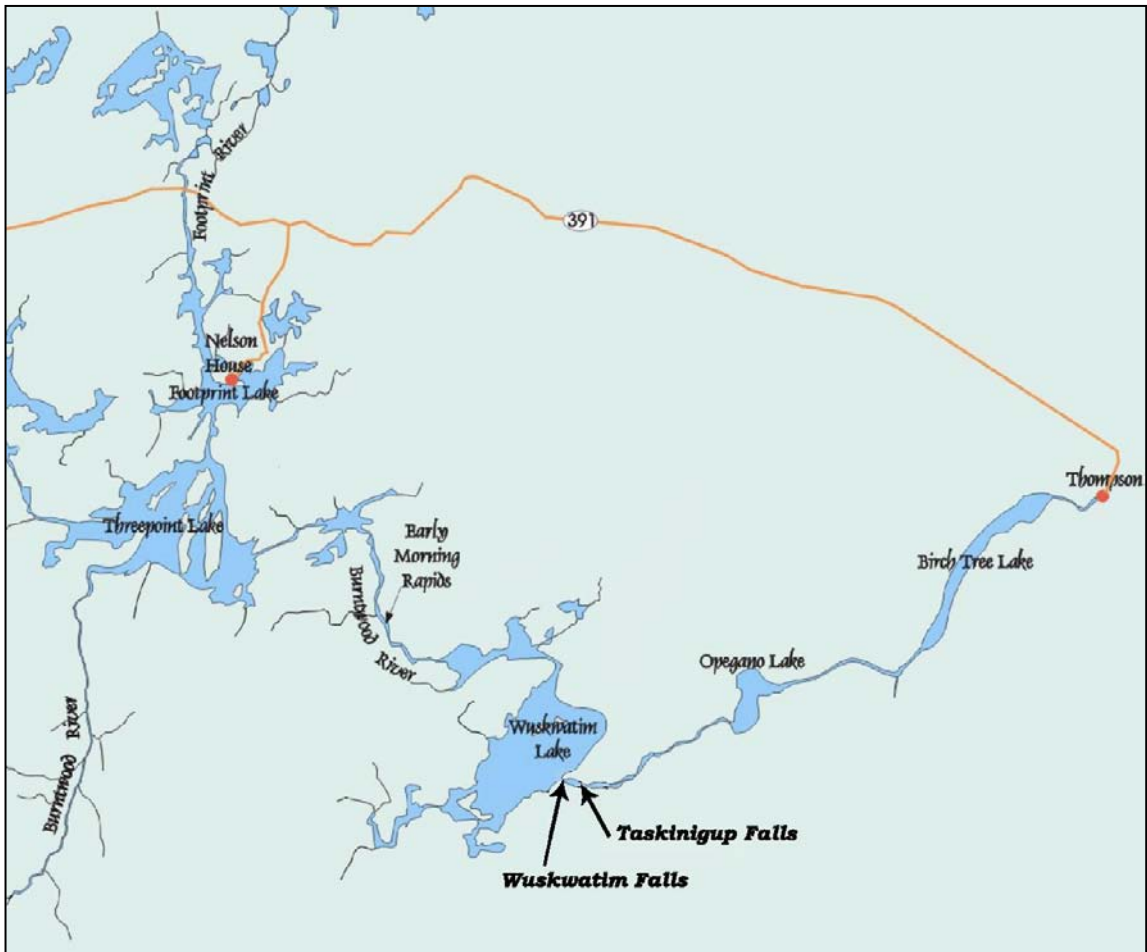
- 1 - Applies to the section of PR 391 between Thompson (starting at the Burntwood River Bridge located at the north edge of town) and Nelson House.
2 - Percentages may not add to 100 per cent due to rounding.

As shown above, the majority of traffic on PR 391 is comprised of passenger cars (Classification 2) and other 2-axle, 4-tire, single-unit vehicles (Classification 3). Single-unit trucks and single trailer trucks with four or less axles (Classifications 5 through 8) represent 3.5 per cent of the total traffic on PR 391. Larger trucks with four or more axles (Classifications 9 through 13) represent 8.9 per cent of the total traffic.

5.2.2.2 Aesthetics

Wuskwatim Lake is located about 35 kilometres southeast of Nelson House and 45 kilometres southwest of Thompson (see Figure 5.5). The Burntwood River travels past Nelson House and Threepoint Lake before passing through Early Morning Rapids and entering Wuskwatim Lake. Wuskwatim Falls is located at the outlet of Wuskwatim Lake and Taskinigup Falls is located less than one kilometre further downstream. The vertical drop between the sets of falls is about 20 metres. Following Taskinigup Falls, the Burntwood River flows into Opegano Lake before reaching Birch Tree Lake and then Thompson.

Figure 5.5 Location of Wuskwatim Lake



Source: InterGroup Consultants Ltd.

In general, Wuskwatim Lake has very little development and receives very few visitors. Some residents travel from Nelson House for fishing, moose hunting and visits to culturally important areas surrounding the Lake. Local guides who know how to travel safely along the Burntwood River usually escort people visiting Wuskwatim Lake. There are also float-plane landing sites located at the south and north ends of the lake. There are a number of waterfalls and treacherous waters located on the Burntwood River, both upstream towards Nelson House and downstream towards Thompson, which prevent more people from visiting the Wuskwatim area.

The shores of Wuskwatim Lake are mostly covered with trees and varying amounts of beached and leaning debris cover most of the shoreline (see Figure 5.6). There is a substantial amount of woody debris on the lake.

Figure 5.6 Wuskwatim Lake



Source: Manitoba Hydro 2002.

Wuskwatim Falls is located at the outlet of Wuskwatim Lake (see [Figure 5.7](#)). Whitewater rapids and strong currents exist in this area, and few people travel past this point towards Thompson. There are trees along the shorelines and numerous inlets as the Burntwood River widens after the falls and meanders before reaching the second set of nearby falls, Taskinigup Falls.

Figure 5.7 Wuskwatim Falls: Located at the outlet of Wuskwatim Lake



Source: Manitoba Hydro, 2002.

Taskinigup Falls has more whitewater rapids and a greater vertical drop than Wuskwatim Falls. There is a small tree-covered island that separates the current as it passes through Taskinigup Falls. [Figure 5.8](#) displays Taskinigup Falls in the foreground and Wuskwatim Falls in the back left corner.

Figure 5.8 Taskinigup Falls



Source: Manitoba Hydro, 2002.

5.2.2.3 Community Health

The following provides a general overview of the current status of health in Local Region communities. The majority of this section focuses on the reserve community of Nelson House but, wherever possible, South Indian Lake data are also presented. The section is divided into two main components:

- Local perspectives on community health: Provides an overview of perspectives and opinions shared about community health in Nelson House. The information presented has been gleaned from interviews in Nelson House with health and social service providers, as well as others in the community, and the results of the 2000 NCN Opinion Survey – Total Sample.
- Health Status Indicators: Data from Health Canada, First Nations & Inuit Health Branch and Manitoba Health, Department of Decision Support Services were used to compile a series of health status indicators. These were assessed for community

trends and compared, wherever possible, with the same indicators for other Manitoba First Nations living on- and off-reserve.

A full understanding of community health also requires consideration of a community's social, physical and economic environments (Health Canada, 2002). These aspects of community health are presented in other sections (so have not been repeated here) and, where applicable, have been noted in the first component of this section highlighting local perspectives on community health.

Local Perspectives on Community Health

In general, many of the local residents interviewed commented that the community is not as healthy as it could be, especially when compared to Manitoba as a whole. However, most also indicated that community health had improved significantly in recent years.

Those interviewed cited a number of positive developments that are contributing to improved community health and wellness. These include:

- Economic development: According to interviewees, there has been noticeable growth in local infrastructure and community economic development, including new housing, playgrounds, and an increase in NCN-owned businesses and new training opportunities for local residents.
- New health facilities: Health and social service providers identified several recent additions to local facilities providing health care services and programs. These include the opening of the Family and Community Wellness Centre in March 2000, expansion and renovation of the Medicine Lodge, and construction of a new Elders Care Home set to open in the near future.
- Improved health care programming: Nurses interviewed commented on the degree of cooperation among community agencies to provide comprehensive health care, prevention education and health promotion. Further, a recently implemented Community Development Planning Process (see Section 5.2.2.7) has the explicit goal of setting the foundation for community-wide collaboration among organizations. To make sure this happens, the Plan itself is being developed in collaboration with local organizations responsible for service and program delivery. (The social well-being section (Section 5.2.2.4) discusses in greater detail the programs offered in Nelson House that are based on principles of improved

cooperation and collaboration among agencies to provide health and wellness programming that meets community needs.)

Despite these positive developments, health care providers and others have expressed concern about various medical conditions, including diabetes and related conditions, substance abuse, thyroid problems, hypertension, cancer, respiratory conditions, skin rashes and communicable diseases. Many of those interviewed also commented on factors that may be contributing to the above-mentioned health concerns. These include the following environmental and other factors, which in many cases, are seen to be linked:

- Housing: Many of those interviewed commented on the effect that crowded and, in some cases, poor quality, housing is having on the physical and emotional health of community members. Overcrowding and/or poor quality housing were linked to the spread of communicable diseases and other illnesses, the prevalence of respiratory infections and social issues (Section 5.2.2.4). Respondents to the 2000 NCN Opinion Survey – Total Sample listed “More housing” (8 per cent) among the top five things that would improve Nelson House the most over the next five years and 96 per cent of respondents said they were very concerned (86 per cent) or somewhat concerned (10 per cent) about housing shortages in the community.
- Water quality: The quality of local tap water and lake water was frequently mentioned in interviews with health care providers and others as a primary factor contributing to the high incidence of skin problems in the community. Although water testing of potable water has consistently shown the water to be safe, there is still concern that local tap water is contributing to the number of skin conditions. Health Care providers also noted that they see more cases of skin conditions among residents living in homes with water storage tanks. Others in the community have also commented that children get various skin rashes and conditions when swimming in the nearby lake. Some Elders have expressed concern that changes in water quality (including over-chlorination in some cases) have also contributed to other health issues such as stillbirths, cancer, thyroid conditions and asthma.
- Low income: Health care providers cited low incomes as a fundamental barrier to good health among Nelson House residents. They commented that many individuals, particularly those on social assistance, could not afford three meals a day. For diabetics, who may require several snacks throughout the day, this is even more

difficult. In addition, many of the foods consumed are those that are inexpensive, but not necessarily nutritious (e.g., pasta). It was noted that for many children fruits and vegetables are a treat. Health care providers and others are working to address this problem by offering mothers, chronically ill patients and others education on nutrition and how to buy nutritious foods at low cost.

- Personal well-being and self-esteem: Health care providers and others spoke candidly about systemic problems of low self-esteem and personal well-being among community members. These have been linked to a person's emotional health, but also their ability and interest to seek out medical and other support for related problems (e.g., depression, substance abuse).
- Road conditions: Poor quality, largely unpaved roads in Nelson House and along PR 391 were mentioned in interviews with health care providers as a factor contributing to respiratory conditions (as a result of dust) and injuries and deaths (due to accidents). Survey results from the 2000 NCN Opinion Survey – Total Sample also indicate that many in the community see this as a concern. Road quality was cited by 18 per cent of respondents as one of the bad things about living in Nelson House and 14 per cent of respondents said that paved roads and sidewalks would improve Nelson House the most in the next five years.
- Mercury: Community members continue to raise concerns regarding the relationship between mercury levels in fish and community health. This concern stems from the elevated mercury levels seen in lakes and rivers along the Rat and Burntwood River systems following completion of the Churchill River Diversion (CRD) and subsequent flooding in the Nelson House Resource Management Area (RMA), areas near Nelson House and Southern Indian Lake (see Volume 5). The main source of mercury in humans is the fish that they eat. When people consume large quantities of fish containing high levels of mercury, they accumulate high levels of methyl mercury in their systems and are at risk of health problems associated with methyl mercury poisoning. Methyl mercury poisoning affects the nervous system (deafness, lack of muscle coordination, change in vision) and human organs (kidney and liver disease) and can interfere with fetal development during pregnancy (Health Canada, First Nations and Inuit Health Branch, 2002; NCN and Manitoba Hydro, 2002). Elevated levels of mercury in local lakes and rivers have also been linked in community interviews to diminished personal well-being, as many residents have had trouble adapting to and accepting this changed environment.

Mercury testing of fish shows that there has been a gradual decline in fish mercury concentrations during the 1990s, in some cases reaching levels similar to those seen prior to the CRD (see [Volume 5: Aquatic Environment](#))⁴³. In addition to testing of fish, various studies have also been undertaken to determine levels of methyl mercury in residents of Nelson House and South Indian Lake. These studies, conducted by First Nations and Inuit Health Branch, took place between 1976 and 1988 (using hair and blood samples) and more recently in 2000/2001 (using hair samples)⁴⁴. The data indicate that, in general, mercury levels in people have declined in both of these communities. In earlier studies (those between 1976 and 1988), hair methyl mercury levels exceeding the normal range (6 parts per million (ppm)) were found in Nelson House and South Indian Lake. In addition, these earlier studies showed individuals with methyl mercury levels considered “at risk” (30 ppm or over) each year between 1976 and 1988 in South Indian Lake and in 1976, 1978 and 1984 in Nelson House. In the more recent 2000/2001 studies, 98 percent of randomly selected participants and 96 per cent of self-selected (volunteer) participants had highest levels of methyl mercury in hair samples that were within the normal range of 6 ppm or less. In South Indian Lake, 97 per cent of randomly selected participants and 91 per cent of self-selected participants had maximum methyl mercury levels in hair samples within the normal acceptable range (Health Canada, 2002) In the 2000/2001 study, no one tested with methyl mercury levels in the “at risk” range.⁴⁵

⁴³ Caution should be applied in interpreting these findings, as they do not establish consistent measures that can lead to a general conclusion that mercury concentration in fish has reached safe levels for human consumption (where people are not at risk of health related issues when eating local fish).

⁴⁴ Caution should be applied in interpreting these findings, as only a small number of individuals took part in the studies, the methodologies for collecting hair samples may have varied and the amount of fish consumed by study participants is unknown.

⁴⁵ The First Nations and Inuit Health Branch study determined from the hair samples taken in 2000-2001 that none of the participants had methyl mercury levels which placed them at risk for health effects (Health Canada, 2002). However, caution should be applied in interpreting these findings, as the sample size for each community was small and did not include a linked fish consumption study.

Health Status Indicators for Nelson House

The following indicators of health were compiled, based on data from Health Canada, First Nations and Inuit Health Branch (includes Nelson House and South Indian Lake) and Manitoba Health, Department of Decision Support Services (includes Nelson House only):

- Infant and Maternal Health – includes birth rate, fertility rate, birth rate of teen mothers, low birth weight rate, high birth weight rate and infant mortality rate.
- Communicable Diseases
- Mortality – includes mortality rate, premature mortality, potential years of life lost (PYLL)
- Medical Service and Hospital Utilization – includes utilization of medical services and hospital utilization.

Health indicators such as these can be used to monitor and report on progress towards health goals and objectives, and allow for comparisons of health status between different populations and over time.

The following provides a summary of each set of health status indicators included in this report. The data presented should be interpreted with caution. For Nelson House, the population size is very small in each indicator data set and, as a result, even small numbers of cases (i.e., one or two cases) can lead to seemingly large increases in incidence rates. For this reason, wherever possible indicator data were supplemented with information collected through key person interviews with health care providers and others in Nelson House. In addition, it should be noted that health status indicators are developed from categories of illness data; each category includes a number of types of ailments; there is limited ability to comment on which of the specific ailments in each category is encountered in the community. Once again, small population numbers mean that specific data may be misleading with respect to incidence of specific ailments. Furthermore, specific data are often suppressed (i.e., to protect patient confidentiality).

In general, the data show the following with respect to the health of people living at Nelson House (in some cases, data also include NCN members living at South Indian Lake):

- There is a trend toward a slight decline in birth rates compared to the provincial First Nations population. Birth rates remain substantially higher than for the general population.
- There is a decline in infant mortality rates at Nelson House, but rates are still higher than the provincial average for First Nations populations. Leading classifications of infant mortality between 1986 and 1999 were congenital anomalies (for example, Downs Syndrome), conditions originating in the perinatal period (for example, Fetal Alcohol Syndrome), symptoms, signs and ill-defined conditions (for example, Sudden Infant Death Syndrome) and injury and poisoning.⁴⁶
- Low and high birthweight rates are comparable to or lower than the provincial average.
- Injury and poisoning, a defined category of disease, lead to a heavy burden on the community in terms of physician utilization, hospitalization and deaths. The proportion of deaths in this category is higher than for the provincial First Nations populations (in particular, motor vehicle accidents and accidental suffocation) and occurs mainly before the age of 65 years. Similarly, Injury and Poisoning were reasons for hospitalization and physician visits more often for this population than for the Manitoba population as a whole.

Infant and Maternal Health

The points below outline key findings for each of the indicators included in the infant and maternal health data set:

- **Birth Rate:** Between 1990 and 1999, the average annual birth rate for Nelson House on-reserve (including South Indian Lake) was 25.8 births per 1,000 residents. This was lower than the provincial rates of 28.9 births per 1,000 for First Nations living on-reserve and 31.5 per 1,000 for First Nations living both on- and off-reserve. By comparison, in 1999/2000, the provincial average annual birth rate was 12.4 births per 1,000.
- **Fertility Rate:** Between 1990 and 1999, the average annual fertility rate for Nelson House on-reserve (including South Indian Lake) was 108.6 births per 1,000 women aged 15 to 44. This was lower than the provincial rates of 122.6 births per 1,000 for

⁴⁶ Each of these classifications represents defined terms in the infant mortality statistics.

- First Nations living on-reserve and 123.1 births per 1,000 for First Nations living both on- and off-reserve in Manitoba.
- Birth Rate of Teen Mothers: The average annual teen birth rate between the years 1990 and 1999 was 108.4 births per 1,000 teens for the Nelson House reserve community (including South Indian Lake) versus 141.6 births per 1,000 for all Manitoba First Nations teens living on-reserve and 150.2 for all First Nations teens in Manitoba. The teenage birth rate in Manitoba in the fiscal year 2000/2001 was 32.5 births per 1,000 females aged 15 to 19.
 - Low and High Birth Weights: Between 1996/97 and 2000/01, average annual rates of Low Birth Weight babies were just slightly higher in Nelson House (42.1 per 1,000 live births) than in the Burntwood Region overall (39.8 per 1,000 live births). Both of these rates were lower than the provincial average of 43.6 per 1,000 live births. During this same time period, rates of high birth weight infants in Nelson House (133.2 per 1,000 live births) were very comparable to the provincial average (131.7 per 1,000) and much lower than those seen in the Burntwood Region (169.2 per 1,000).
 - Infant Mortality (does not include stillbirths or miscarriages): Because the number of infant deaths per year in the communities is low, even in the Burntwood Region, the interpretation of available data is difficult. The average annual infant mortality rate between 1990 and 1999 was 14.9 infant deaths per 1,000 live births in Nelson House (including South Indian Lake). By comparison, during this same time period, Manitoba First Nations living on-reserve showed a rate of 11.8 deaths per 1,000 and Manitoba First Nations living both on- and off-reserve recorded a rate of 9.9 infant deaths per 1,000 live births. All of these rates were much higher than the provincial average annual rate of 6.9 deaths per 1,000 live births reported for the period 1995/96 to 1998/99 (Manitoba Health, Department of Decision Support Services). In terms of causes of death, between 1986 and 1999 congenital anomalies accounted for the highest proportion (21.9 per cent) of infant deaths (among known causes) in Nelson House (includes SIL) and were the second leading cause of infant mortality for all First Nations, regardless of place of residence. The second leading cause of infant mortality in Nelson House and the leading cause among Manitoba First Nations was conditions originating in the perinatal period (resulting from conditions of the mother, such as hypertension, nutritional disorders, injury or ingestion of noxious substances). Further, two possibly preventable causes of death (symptoms, signs and ill-defined

conditions and injury and poisoning) accounted for more than 20 per cent of all infant deaths in each of the three residence categories. Typically the primary cause of death for infants in the symptoms, signs and ill-defined conditions category is Sudden Infant Death Syndrome (SIDS). Although the actual cause of SIDS is unknown, there are recommended measures to prevent such deaths.

Communicable Diseases

A comparison of selected communicable diseases was undertaken for Nelson House on-reserve (not including South Indian Lake) and the province as a whole. The most striking differences in communicable disease rates are in the rates for MRSA (methicillin-resistant *Staphylococcus aureus* - a bacteria that can cause infection in those who are elderly, very sick, or who have an open wound on their body) and *Shigella* (a bacteria that results in diarrhea, fever and stomach cramps and is common when basic hygiene practices such as hand washing are inadequate or when contaminated food is consumed). Between 1997 and 2000, the average annual rate of infection due to MRSA was 2.8 cases per 1,000 residents in Nelson House compared to 0.1 cases per 1,000 residents of Manitoba overall. This large discrepancy between Nelson House and the rest of province appears to be due to an outbreak of MRSA in the year 2000 and is not reflective of a consistent problem from year to year. However health care providers noted that there are still MRSA cases appearing among community children. Between 1997 and 2000, the average annual rate of *Shigella* infection was 2.3 cases per 1,000 residents in Nelson House compared to 0.1 cases per 1,000 residents of Manitoba. Again, the elevated average annual rate in Nelson House appears to be due to outbreaks (in 1997 and 1998) and is not reflective of consistent health problems in the population. Health care providers in Nelson House also commented during interviews that they have not seen *Shigella* in the community since 1998.

Health professionals in Nelson House identified additional communicable disease concerns in the area, including the high occurrence of skin rashes and skin conditions (most prevalent among children) and occurrence of Tuberculosis (they cite about 20 cases in the last 10 years).

Mortality

- Mortality Rate: Between 1990 and 1999, the average annual mortality rate in Nelson House (5.4 deaths per 1,000 residents) was slightly lower than for Manitoba First Nations on-reserve (5.5 per 1,000 residents), but higher than the rate for First Nations

living on- and off-reserve in Manitoba (4.9 per 1,000 residents). The leading causes of death in Nelson House during this time period were injury and poisoning.⁴⁷ This accounted for 58 (or 28 per cent) of all deaths, and was followed by diseases of the circulatory system (includes heart disease and stroke), which accounted for 39 deaths (just under 19 per cent of all deaths). In Manitoba, between 1985 and 1998 (the most recent years for which these data were readily available), injury and poisoning accounted for just 6.4 per cent of all deaths, while in the Burntwood Region, Manitoba Health data indicate that this classification accounted for approximately 28.5 per cent of all deaths. Between 1985 and 1999, diseases of the circulatory system accounted for nearly 42 per cent of all deaths in Manitoba and 25.4 per cent of all deaths in the Burntwood Region.

- Premature mortality (the number of deaths prior to the age of 65): Between 1985 and 1999, approximately 63 per cent of deaths (130 of the total 270 deaths) among Nelson House residents (including SIL) occurred before the age of 65. Premature deaths accounted for just fewer than 60 per cent of all female deaths and approximately 65 per cent of all male deaths in Nelson House. By comparison, during this same time period, 60.4 per cent of deaths among residents of the Burntwood Region were premature, while 23.6 per cent of all deaths among the general population of Manitoba were premature. The leading causes of premature mortality in Nelson House were injury and poisoning, which accounted for just over 43 percent of all deaths before the age of 65, and neoplasms (cancer), which accounted for 11.5 per cent of deaths before age 65.
- Potential Years of Life Lost (PYLL) (the number of years of life lost for deaths occurring before age 70): PYLL emphasizes causes of death that tend to be more predominant among younger persons. In Nelson House (including South Indian Lake), between 1985 and 1999, deaths between the ages of 1 and 69 accounted for 3,959 PYLL. Males accounted for 70.8 per cent (or 2,803) of the total PYLL and females accounted for the remaining 29.2 per cent (or 1,156) of PYLL. During this time period, the leading cause of PYLL in Nelson House was injury and poisoning (60 per cent of all PYLL), with the effect being significantly greater for Nelson House males (74.9 per cent of PYLL for males versus 24.0 per cent of PYLL for females). In Manitoba, between 1985 and 1998, injury deaths accounted for 27.4

⁴⁷ Motor vehicle accidents and accidental suffocation had the highest incidences in this category.

percent of all PYLL among Manitoba males and 17.3 per cent of all PYLL among Manitoba females.

Medical Service and Hospital Utilization

- Utilization of Medical Services: Between 1996/1997 and 2000/2001, Respiratory Diseases were the leading reason for individuals to seek medical treatment in Nelson House (283.2 patients per 1,000), the Burntwood Region (271.8 patients per 1,000) and Manitoba as a whole (354.4 patients per 1,000). During this same time period, rates of patients seeking treatment for injury and poisoning in Nelson House (the second leading reason to visit a physician) were higher (217.6 patients per 1,000 residents) than in the Burntwood Region (187.6 patients per 1,000 residents) and in Manitoba overall (201.0 patients per 1,000 residents). The five leading causes for utilization of medical services identified in the Nelson House data are consistent with those cited by local health care providers. When asked for the most common reasons for residents to visit the Nursing Station, nurses cited the following: respiratory problems, skin conditions, injuries (primarily on weekends), chronic patient visits (e.g., those with diabetes and hypertension), and abdominal pains.
- Hospital Utilization: Average annual hospital utilization rates between 1996/1997 and 2000/2001 were consistently higher in Nelson House (244.1 hospitalizations per 1,000 residents) than in the Burntwood Region (194.2 hospitalizations per 1,000 residents) and in the province overall (117.02 hospitalizations per 1,000 residents). During these years, the leading causes of hospitalization for residents of Nelson House were pregnancy and childbirth, followed by injury and poisoning and diseases of the respiratory system. In general, although hospitalization rates are higher for Nelson House residents than for the rest of Manitoba, rates in this community are following the same trend as the rest of the province, and are slowly decreasing over time.

5.2.2.4 Social Well-Being

The following provides an overview of current social well-being in Nelson House, particularly among NCN members. For the purposes of this study, social well-being refers to the ability of Nelson House residents to meet their basic needs (i.e., food, shelter) and to engage in healthy social relationships (City of Calgary 2001). Information provided in this section was developed based on results from key person interviews and

workshops with social service providers and others in the community, including Elders from both Nelson House and South Indian Lake, youth and women and from the 2000 NCN Opinion Survey – Total Sample.

Results from the 2000 NCN Opinion Survey – Total Sample indicate that, in general, community members feel good about the future of Nelson House (74 per cent of men and 66 per cent of women over 16 years of age were positive). Interview data indicate that much of this optimism can be credited to a number of initiatives and developments that have taken place in the last five to ten years. These include:

- The emergence of self-governing institutions in Nelson House, including education, health programming and child and family services: NCN has gained financial and management control over a wide range of programs and services previously delivered by either the federal government or other external agencies. These include responsibility for:
 - On-reserve housing through the NCN Housing Authority (NHA)
 - On-reserve schooling through the Nelson House Education Authority
 - Child and Family Services
 - Wellness Centre facility and some health and wellness programming
 - Administration and delivery of the National Native Alcohol and Drug Awareness Program (NNADAP)
 - Administration and delivery of community-specific programs for Nelson House residents through the Nelson House Medicine Lodge. (The Lodge provides services to all Keewatin Tribal Council communities, but has developed and delivers specific programming for local residents at Nelson House.)
 - Emergency services (fire and ambulance)
 - Policing services
 - Recreational programming and facilities
 - Personal care home
 - Economic development initiatives through the Nelson House Economic Development Corporation
 - Administration of the NCN Trust, as well as some of the programs it funds

- The Nelson House Resource Management Board, a co-management advisory board with the provincial government regarding land and resource management in the Nelson House RMA
- Collaboration and possible partnership with Manitoba Hydro in assessing proposed future hydroelectric developments in the Nelson House RMA.

Local administrative control (either full or partial) over programs and services has led to a number of positive developments in their delivery and implementation. Programs are able to be sensitive to and focus on the unique needs of NCN members and there is greater flexibility in program implementation. For example, in August 1994, the Nelson House Education Authority introduced a year-round education schedule to increase attendance and decrease drop-out rates. Year-round schooling also allows students to participate in seasonal traditional activities. Administration at the local level has also led to increased collaboration among many local programs and this has improved overall service delivery. The Family and Community Wellness Centre, which opened in March 2000, is an excellent example. The centre integrates health-related services and Child and Family Services programming to promote family and community wellness more adequately. Finally, with local administration, NCN is able to hire and train local people who understand and appreciate local circumstances. Social service providers interviewed believe hiring locally has led to improvements in the quality of program delivery and increased local capacity.

- A sense of cultural revitalization and a renewed interest among community members in learning traditional teachings: When asked in the 2000 NCN Opinion Survey – Total Sample what things about Nelson House should not change in the future, the largest number of respondents said ‘our culture and way of life’ (18 per cent). Workshops and interviews with community members suggest that there is a keen interest among many NCN members, particularly women, to re-learn and re-claim their language, culture and traditions. This is evident in both personal stories of ‘rediscovery’, as well as an increase in community programming and events that are either geared towards cultural teachings or based on traditional methods. Examples of the latter are varied and include: The Granny and Grandpa Program at the school, the Country Foods Program, Grandmother Moon Ceremonies organized by staff at the Wellness Centre, Wuskwatim site ceremonies in 2000, the 2002 Headdress and Peace Pipe Ceremony for Chief and Council, the incorporation of sweats and healing

and sharing circles into programming at the Wellness Centre and Medicine Lodge, the 2002 Cree Nation Gathering held in Nelson House, community powwows and programming for traditional drumming, jingle dancing, singing and arts and crafts. Many believe that knowing and understanding one's language and traditional ways of life is an essential pathway to personal and community well-being.

- Increased economic development activities, including new employment opportunities: The most common reasons why respondents to the 2000 NCN Opinion Survey – Total Sample said that they feel good about the future of Nelson House included “job opportunities” (32 per cent) and “economic development” (23 per cent). Some of the developments that may have led to this response include: an increased ability for local organizations to hire at the local level (as a result of greater administrative control at the local level), the establishment of the Nelson House Economic Development Corporation, the use of monies from the NCN Trust to invest in business ventures and provide capital for community projects and the establishment of the NCN Future Development Office in Nelson House which has created new job opportunities for several NCN members. In addition, the proposed future hydroelectric project at Taskinigup Falls at the outlet of Wuskwatim Lake (the Project) has also created anticipation about the prospects for future job and training opportunities as a result of project construction.
- The continued existence of relatively strong support networks among families and, in many cases, friends and neighbourhoods: Family and friends still continue to be central in defining NCN community social relationships. When asked in the 2000 NCN Opinion Survey – Total Sample to list good things about living in Nelson House, respondents most frequently said “lots of family and friends” (38 per cent). During interviews with Elders and at the women's gathering, it became clear that strong support networks exist in the community. These networks are quite evident with regard to childcare and child-rearing practices especially involving grandchildren. The interviews and informal conversations with Nelson House residents suggest that many community members also provide care of neighbourhood children, as needed. To some, however, the strength of these social relationships has diminished in recent years. Elders and social service providers, in particular, indicated during interviews that the strength of informal support networks has weakened, primarily as a result of the daily challenges faced by community residents (Interviews with NCN Elders, 2002; Interviews with Social Service Providers, 2002).

Despite the many positive aspects of life in Nelson House, results of the 2000 NCN Opinion Survey – Total Sample, as well as interviews and workshops with community members, suggest that NCN members believe that the positive future envisioned by residents will first require addressing key social challenges. Most notable among these are the following:

- Environmental Health: The health of the local environment, both real and perceived, plays a dominant role in people's feelings about their quality of life as Nelson House residents. Of particular importance in this regard are the health of local water bodies (including water quality), community garbage and litter and community landscaping. Of these, interview and workshop data suggest that the most important is the health of local water bodies. Traditionally, water has played an important role in the life and identity of NCN members. When asked to describe traditional culture and lifestyles, members invariably speak about life on the land and the use of local water bodies for food, transportation and traditional activities. In recent years, the ability of local residents to travel along the Burntwood River System has been limited, primarily as a result of changes brought on by the Churchill River Diversion (CRD) (i.e., flooding, increased erosion and debris, and the creation of dangerous currents and rapids). This is seen as a factor in limiting traditional outdoor pursuits, and many also feel that it has had a significant effect on people's emotional and spiritual well-being. Some Elders described feelings of grief, loss and sadness for the damage that has taken place. Others are saddened that their children and grandchildren will not be able to experience water the way they did as children. Interviews also suggest that changes in local water bodies have created personal and family stress, particularly fear that children will be injured as a result of playing in nearby Footprint Lake and a sense that lake water is now 'dirty' and effecting the quality of treated local tap water (others note that water storage and handling methods may also play a role). Finally, many of those interviewed saw a correlation between the loss of traditional and outdoor activities and the deterioration of family structures and increased participation in unhealthy activities.
- Home Environments: In Nelson House, crowded and poor living conditions (three-bedroom homes typically have an average of eight to ten people living in them) are considered by many to be among the root cause of health and social problems. These include increased rates of respiratory diseases, outbreaks of communicable diseases

(e.g., scabies) and, according to interview and literature data, a possible contribution to family dysfunction and associated social problems (Interviews with NCN social service providers, 2002; NCN Women's Gathering, 2002; Doyle 1993; Jackson & Roberts 2001). Local residents and organizations recognize this as a concern and are working to address the problem. A new Housing Policy introduced by the NCN Housing Authority has set out measures to reduce current housing shortages and upgrade existing housing stock, and this also emerged as a priority goal during a Community Goals Workshop for development of a new Community Development Plan.

- Personal and Family Well-being: Personal and family well-being refers to the holistic health and well-being of individuals and families in the community. Interview data and the results of the 2000 NCN Opinion Survey – Total Sample suggest that, in Nelson House, some families face problems (e.g., Child and Family Services works with about 200 cases; Community Health and Wellness Centre staff, personal communication, 2002). The results are evident in alcohol and substance abuse, poor parenting skills, and family violence. Those interviewed frequently identified the root cause of these problems as rapid social change, brought on by such things as the introduction of social assistance, an all-weather road to the community, residential and church-operated day schools, abuse of residents by some clergy and teachers, effects of the Churchill River Diversion, and the prevalence of television (Interviews with Social Service Providers, 2002; Interviews with NCN Elders, 2002; NCN Women's Gathering, 2002). Many services and programs have been designed and implemented to address these social issues at the local level. In some cases, however, these programs are still in their infancy and uptake has not been fully realized (Interviews with Social Service Providers, 2002).
- Community Infrastructure: Some NCN members have noted the quality of community infrastructure as a concern. Results of the 2000 NCN Opinion Survey – Total Sample indicate that some members include among the bad things about living in Nelson House: poor quality of drinking water (8 per cent) and the need for better roads (18 per cent). In addition, fourteen per cent said that in the next five years, paved roads and sidewalks would improve Nelson House the most. Of these, water quality raised the most concern – both the quality of piped water from the water treatment plant, and the quality of trucked water stored in tanks near people's homes. Some have commented that they are so worried about the quality of drinking water

that they now buy bottled water for their families – an expense not easily afforded by families with limited incomes (NCN Women’s Gathering, 2002). Those responsible for delivering community health services also cite an increase in skin diseases and in intestinal problems (Community Goals Workshop, 2002; Interviews with Health Care Providers, 2002).

- Lack of Employment Opportunities: Despite new community economic development initiatives and the creation of new employment opportunities, there are still a large number of Nelson House residents who are unemployed. Data from the 1996 Census of Canada and the 2000 NCN Opinion Survey – Total Sample indicate that the unemployment rate in Nelson House is in the range of 45 to 55 per cent; much higher than the 8 per cent unemployment rate seen provincially in 1996 (Statistics Canada 1996). Using the Statistics Canada methodology, unemployment was calculated as the proportion of those without work compared to all workers actively looking for work. Therefore, it does not include those people who have given up looking for work because of lack of opportunities. As a result of unemployment, there is a high dependence on social assistance (NCN Social Assistance Program staff, personal communication, 2002). Literature and interview data both speak to the negative social consequences created by chronic unemployment and long-term reliance on social assistance (Wilson 1991 in Gephart 1997).

5.2.2.5 Culture

This section provides an overview of the existing cultural environment in the Local Region. Culture is a composition of values, beliefs, perceptions, principles, traditions and world views that are superimposed on one another and are perpetuated through the language and kinship system of a distinct group of people. Culture can be manifested in the way people do things and the way they think.

Nine indicators were identified as most representative of culture. To understand the status of existing culture, key person interviews were conducted, based on a set of questions developed and reviewed with NCN representatives. Each cultural indicator is discussed below. The four indicators considered to be vulnerable at the present time (without the Project) are presented first.

- Language: The ability to speak the language of one’s culture is critical to understanding and enjoying all the subtleties of the culture. The loss of first language is problematic worldwide. Although known commonly as Cree, the language of the

Nehethow (people from the four directions) at Nelson House is called Nehethow-we-win (speaking from the four directions). Continuation of Nehethow-we-win as a first language of NCN appears to be doubtful unless immediate steps are taken to restore its use. Many of those interviewed felt that the loss of Nehethow-we-win language is rooted in the residential school system, as well as earlier day schools in Nelson House, where children were systematically punished for using their first language. Other outside influences, most notably television, are also seen as contributing to a decline in the use of Nehethow-we-win language. Most children in Nelson House now speak English as their first language. There are differences between the Nehethow-we-win spoken by Elders and older people (“high” or ancient Nehethow-we-win) and the Nehethow-we-win spoken by young people. Efforts are underway by the Nelson House Education Authority to introduce Nehethow-we-win language programs and the goal is to eventually introduce Nehethow-we-win immersion at all grade levels. However, the effectiveness of these measures may be limited by the lack of reinforcement of Nehethow-we-win language in many homes, a worry identified by those interviewed.

- Traditional Knowledge: Over time, observations, experiences and events worked together as the foundation for a way of understanding, now referred to as Traditional Knowledge (TK). This knowledge reflects a holistic and total understanding of the relationship of all things, developed through thousands of years of interaction with the habitual physical environment and other human beings. NCN has developed their own definition of TK as follows:
 - The observation and experience of the land
 - Aboriginal law regarding how the environment works
 - The understanding of NCN’s place in the world – how things are connected, including spirituality; the relationship to the land
 - The goals and aspirations of NCN
 - The outlook on the proposed projects – concerns; acceptability
 - NCN’s own identity and culture
 - The stewardship of the land
 - A base for natural resource management.

Knowing one's way around the physical environment provided a sense of physical, emotional, mental and spiritual sustenance, in spite of outside social changes forced upon the community. It strengthened one's personal identity. Interviewees noted that, few people now venture down river to the Wuskwatim Lake area due to the difficulty in traveling the waterways since the CRD in the late 1970s. Elders and resource harvesters identified CRD as disrupting and destroying their physical and cultural environment. For this and other reasons, people are not using the land as frequently as in the past. Traditional Knowledge has been eroded and, in particular for Elders, has resulted in continuing grief. Elders are concerned that, because people are not using the land as frequently as in the past, that knowledge is not being put to use and, therefore, will eventually be lost. Traditional Knowledge was collected and incorporated as part of the EIA studies, including a TK study undertaken by NCN. The NCN TK Committee expressed an interest in continuing to collect, document and use TK for many purposes in the community – as a legacy for young people, for education, for resource management and for other purposes.

- Cultural Practices: Cultural practices are customary conventions that reinforce one's cultural identity. Some cultural practices are reappearing among some community members. Youth interviewed, in particular, indicated that they are anxious to learn about their ancient roots and traditions. They indicated that traditional activities are a way to revitalize the community and develop unity. Ceremonies such as sweats, morning and evening prayer and fasting are regularly performed. Women's ceremonies are also taking place. People are making their own drums and both young men and women are learning and taking part in traditional drumming. A ceremonial site near Wuskwatim Lake is possibly one of the most revered landscapes within NCN's traditional lands. Ceremonies held in 2000 at the site were viewed as having a major positive effect on community members. Ancient legends about Taskinigup Falls and Wuskwatim Falls continue to be part of the cultural experience of NCN members. Important cultural sites also occur elsewhere in the RMA, such as at Mynarski and Suwanee Lakes and at Mile 20 along PR 391. NCN has initiated a Granny and Grandpa Program at the school to teach children the importance of cultural practices. In addition, NCN has established a cultural facility at Leftrook Lake where community members can practice their culture and learn from the Elders and others.

- Health and Wellness: Interviewees identified four kinds of health – physical, mental, spiritual and emotional. There is active health and wellness programming within the community that is attempting to address all four aspects of health. Some interviewees noted that both traditional and contemporary methods are being used to heal people in the community. Many felt that physical health of community members is not as good as in the period prior to the CRD, but that the community is on a healing journey. Elders noted that, in the past, people were healthy in all respects because they were active, ate wild food and respected one another. Damage caused by churches and governments was seen as contributing to poorer health. A more sedentary lifestyle, caused by introduction of snowmachines and motorboats, decline in fur markets and effects of the CRD (e.g., making it difficult to travel to traplines south of the Burntwood River), meant that people were less physically active. In addition, changes in diet (less wild food; use of foods with high fat content) also contributed to a decline in physical health (e.g., increased diabetes). Current crowded housing conditions and the quality of water (both drinking water at Nelson House and water in Footprint Lake) also were noted as contributing to poorer health (e.g., thyroid conditions, cancers and asthma).
- World View: World view takes into account the teachings, values, beliefs, understandings and perceptions that work together to explain how and why people reach certain decisions and how they act on those decisions in a way that their culture considers appropriate. The abstract expression of culture is captured in world view and Nehethow philosophy (see “language” above). At Nelson House, there is a strong relationship to Mother Earth and a strong belief that all things are connected, including to the whole cosmic order. This was evident in interviews with key persons of all ages. Spirituality and respect were noted as fundamental values that people strive for. Elders noted that they felt good about their accomplishments and their hard work and they had their teachings to keep them strong. Key persons noted that the residential school system stripped many people of their language and the teachings of their grandparents and parents and left them confused about their identity and beliefs. The welfare system and television were noted as other influences that have eroded Nehethow values and ideals. At the same time, young people interviewed indicated that there has been a resurgence and renewed interest in upholding the Nehethow world view.

- Kinship: Kinship is a socially constructed consequence of biological reproduction and can be viewed as the glue that binds a community together. It provides the basis for certain kinds of relationships and obligations. Key persons noted that kinship patterns prior to Europeans were different than they are today. For example, society at that time was matrilineal (traces its lineage through the women) and matrilocal (husband comes to live with his wife's family). NCN reported that a clan system of naming was used, but was changed by missionaries who had difficulty in understanding names and insisted that Western names be used. Some practices, such as grandparents raising the first-born child, continue in some cases. Family connections are considered by some to be weaker than before; several key persons felt that people do not help each other as readily as before and that television programs are influencing social norms.
- Leisure: Leisure is defined as activities that people do in their spare time. Elders noted that, in the past, there was very little spare time because of long hours of work. Leisure time took place mainly during the summer when large groups of people would gather together to fish, hunt, pick berries and herbs, arrange marriages and generally enjoy each other's company. In winter, family groups would gather around the fire and listen to legends that had been passed down. Today, interviewees noted that television occupies most people's spare time. However, in summer people enjoy boating and, to some extent swimming, although swimming has declined due to concern about debris, sharp rocks (rip rap along shorelines) and the possibility of developing skin rashes (such as "swimmer's itch"). There are a number of organized recreational activities in Nelson House for people of all ages, through the Recreation Department, NCN Trust Office and the Family and Community Wellness Centre (see [Appendix 1](#), Sections 2.3.8.2 and 2.3.12.2 for more details); examples include basketball, volleyball, broomball, hockey, softball, sponge hockey, arts and crafts and organized trips to Thompson for swimming, bowling, golf, curling and skiing. The Youth Group has established a Drop-In Centre for young people. There is also an Elders Resource Centre located in the Wellness Centre.
- Law and Order: In the past, customary law was practiced by which the community had a set of unwritten laws and protocols to which members adhered. Law and order was maintained by mutual respect. Elders usually presided over situations of conflict and resolution was by community consensus. Since treaties (which a key person felt have been used in a way different than intended by them, i.e., to share the land and

resources with newcomers), the imposition by governments of The Natural Resources Transfer Act, and other new laws, law and order now primarily rests in the hands of others. A local police force, supported by the RCMP in Thompson, maintains law and order in the community. A new justice initiative is underway. Laws pertaining to natural resources are enforced by Natural Resources Officers. Political organization consists of an elected Chief and Council who are mandated to manage the affairs of the First Nation.

- **Cultural Products:** Cultural products are often the expression of cultural practices. They include the archaeological record of ancient cultural practices (described by NCN as “since time immemorial”; findings date back for at least 6,000 years) and the ethnographic record of living cultural practices. The living culture is represented by visual and abstract expressions. Ceremonies, dancing, singing and drumming are most often the means of expressing one’s culture, as well as artistic creations such as birch bark biting, beading, quilling, painting, sewing, knitting, wood and stone carving and storytelling. Other functional cultural products – such as net making, and canoe building – were made until recently.

5.2.2.6 Community Organization and Governance

NCN is governed by a Chief and six Councillors, elected under NCN’s own Election Code which was adopted in 1998. In 2000, approximately 2,260 NCN members lived on reserve at Nelson House while approximately 80 members resided in the small adjacent Northern Affairs community of Nelson House. In addition, approximately 960 NCN members lived at South Indian Lake. While the majority of residents of both off-reserve communities are NCN members, each community is governed by a Mayor and Council under *The Northern Affairs Act (Manitoba)*. At South Indian Lake, a Headman is also elected to represent NCN members in that community (about 80 to 90 per cent of all residents). Members at South Indian Lake have for some time been actively working to establish their own reserve and Cree Nation, separate from NCN, called O-Pipon-Na-Piwin. Beyond the Local Region, NCN members live in Thompson, Winnipeg, Brandon and other locations.

NCN delivers most community-based services available to on-reserve members ([see Appendix 1](#)). Some are operated directly by the Cree Nation government (e.g., different provides include Social Assistance, Public Works, Membership Services), while others operate under the auspices of elected or appointed boards (e.g., Education Authority, Housing Authority, Economic Development Corporation, Wellness Centre, Personal Care

Home). A full range of services is provided to members (see Section 4.2.2), including Kindergarten through high school education, adult education, training and employment services, housing, infrastructure and public works, some health and wellness programming, day care, child and family services, economic development, resource management and land use programs, a personal care home, recreation programs and facilities and policing and emergency services. A regional addictions treatment centre is also operated at Nelson House. In addition, NCN operates businesses wholly owned (e.g., Mystery Lake Hotel) or partially owned (e.g., Footprint Engineering) by the Cree Nation.

Particularly within the past two decades, NCN has developed considerable capacity in planning and delivering services. Individual organizations have undertaken substantial future planning and, as indicated in Section 5.2.2.7, NCN has begun a process of comprehensive development planning for the community. A key objective is that the planning is community-driven.

In addition to experience gained through delivery of government programming, NCN has built organizational and governance capacity through the process of negotiating, settling and implementing the NFA Implementation Agreement (1996). This agreement was negotiated in a multi-party setting, involving Manitoba Hydro and the governments of Manitoba and Canada. In addition to specific allocations, annual interest earnings from the Agreement Trust Fund are allocated, via a community-based Community Approval Process, to community priorities.

Over the past several years, NCN's Future Development Team has actively participated in joint planning with Manitoba Hydro and to some extent other organizations as well. This has been a multi-faceted planning process, involving a wide range of parties and topics (i.e., from financial and business planning to environmental assessment and public involvement).

5.2.2.7 NCN Goals and Plans

NCN goals and plans will play a role in shaping the future of the Local Region without the Project, particularly for members resident at the community of Nelson House. The following provides a summary of current goals and plans of NCN, and outlines the current community planning process. NCN has developed and is developing goals and plans for the future of the community, particularly at Nelson House. NCN has developed a draft Vision Statement, as follows:

“To exercise sovereignty that sustains a prosperous socio-economic future for the Nisichawayasihk Cree Nation”.

With the transfer of authority for key services to local control (i.e., housing, education, social services, water and sewer infrastructure, economic development) over the past 20 years and the building of local planning capacity, goals and plans have been developed in many individual NCN organizations. Chief and Council, through day-to-day decision-making, have articulated their views about future directions of the community. These goals and plans have been expressed through regular business of the Cree Nation government (e.g., capital planning), as well as through special processes such as the Community Approval Process undertaken annually to guide expenditure of an interest fund from 1996 NFA Implementation Agreement trust funds.

Within the last five years in particular, substantial community-based activity has been undertaken, including the addition of several businesses (Otohowin Gas, Lucky Dollar Store, Footprint Engineering, Meetah Building Supplies), community facilities (e.g., Wellness Centre, Elders’ Care Home) and housing and infrastructure (although not enough to address the housing backlog and rapidly growing population). Individual NCN organizations have developed, and continue to develop, goals and plans for services that they deliver to NCN. Many specific plans are underway. Some of these plans are focused on the community of Nelson House, while others relate to land and resources within the Nelson House RMA and beyond the RMA.

Community-based plans include:

- Possible new retail services
- Tourism plans (details commercially confidential)
- Continued housing and infrastructure expansion
- Possible expansion of some existing businesses.

Within the Nelson House RMA, future plans include:

- Finalization of Treaty Land Entitlement selections and potential development of a sub set of these parcels
- Tourism plans (details commercially confidential)
- Forestry plans (although not in the Wuskwatim study area)
- Ongoing mineral exploration plans (although not in the Wuskwatim study area)

- Commercial fishing plans for new market opportunities
- General emphasis on strengthening traditional pursuits on the land, particularly for youth, as part of activities in health and wellness, education, justice and economic development
- Participation in land and resource use planning as part of the Nelson House Resource Management Board, along with the Province of Manitoba.

Beyond the RMA, NCN has undertaken ventures, such as the purchase of the Mystery Lake Hotel in Thompson.

In 2001, NCN Chief and Council initiated a process of comprehensive community planning. This planning process was initiated for the following main reasons:

- Out-of-Date Existing Community Plan: In 1983 a Community Plan was prepared for NCN under a provision of the Northern Flood Agreement and, since that time, has served mainly as a guide for physical expansion of Nelson House. The physical plan has been largely completed and the document is out of date.
- Interest in Broad Scope of Planning: NCN was interested in considering comprehensive plans, in particular looking for improved coordination and communication among the many individual organizations currently engaged in delivering services to NCN members.
- Prospect of Future Development: The prospect of potential future hydroelectric development in the Nelson House RMA and joint planning, along with Manitoba Hydro, over the past several years has stimulated discussion in NCN about future goals and plans of the community against which to evaluate possible future changes associated with possible hydroelectric development.

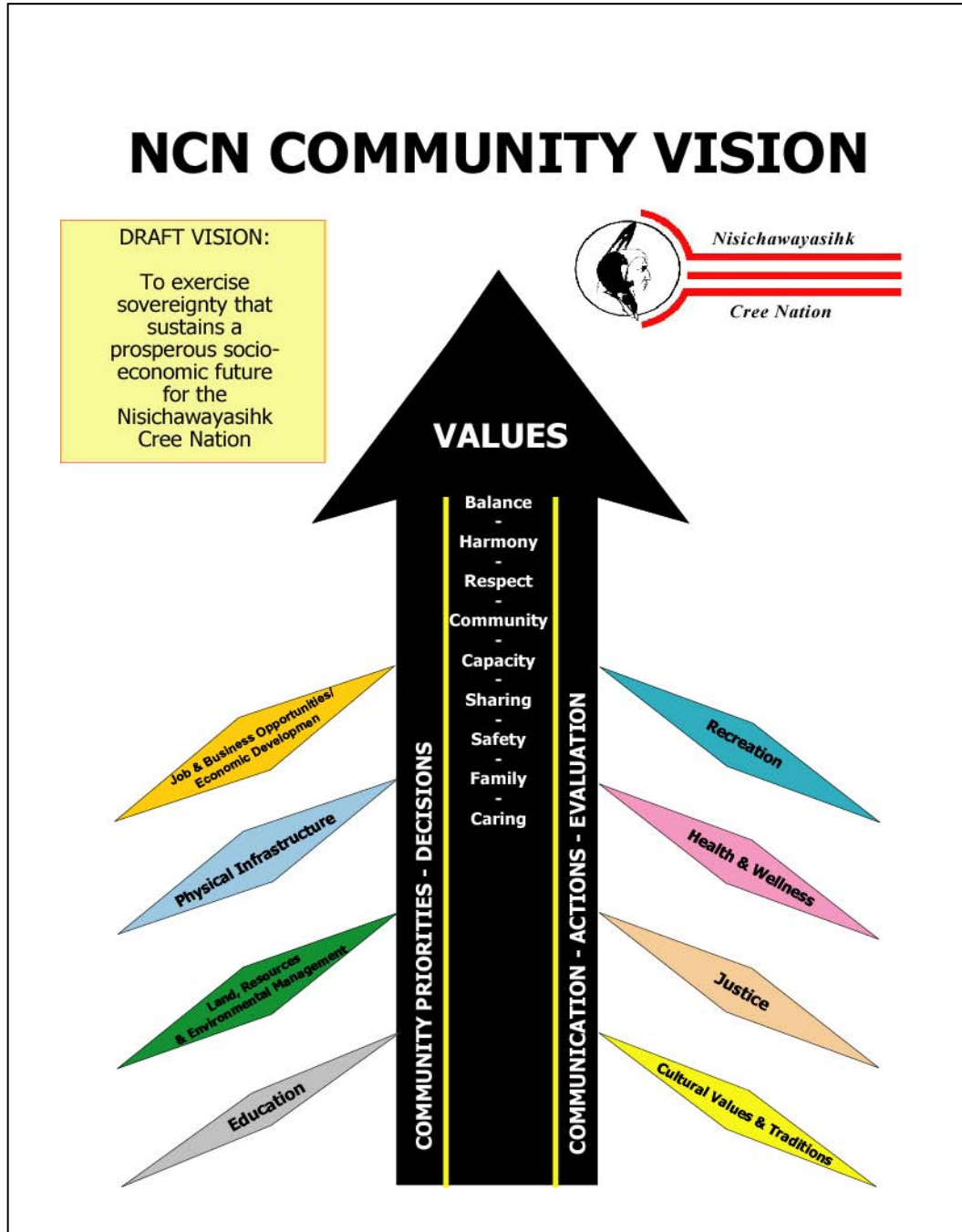
During 2001, a Steering Committee of NCN community members began a process of developing a new Community Plan for NCN. To date, the process has involved the completion of a work plan for a Community Development Plan and the initiation of a process to develop community goals. In both cases, an integrated and collaborative approach has been taken to ensure that efforts already underway by community organizations are incorporated into the new plan and that these organizations are working towards a common vision and goals. The Steering Committee felt that a key factor in ensuring the success of a new community development plan was the creation of the plan by the community for the community. The Steering Committee is working with local

organizations to identify community goals for both the short-term (next five years) and long-term (twenty years) future.

Work has been focused around eight theme areas, set out in [Figure 5.9](#). The arrow was conceptualized at an NCN community goals workshop to illustrate their planning approach. The following are the key components to the arrow:

- The guiding values in the centre of the arrow are those that are repeatedly reflected in plans of individual NCN organizations.
- The processes seen as essential in implementing and achieving community-developed goals are listed along the side of the arrow as: *community priorities, decisions, communication, actions, and evaluation*.
- The eight themes are seen as guide feathers that should be aimed in the same direction in order to achieve the target NCN vision.

Figure 5.9 NCN’s Concept for Community Vision and Goals



5.2.3 Effects and Mitigation

The Project is expected to have both positive and negative effects on people in the Local Region (NCN, including members living at Nelson House and the Nelson House Northern Affairs community). The Project would have the most pronounced effect on these people by virtue of their proximity to the Project, their continued traditional use of the area around Wuskwatim Lake, and their participation in the Project as a potential partner (including employment and business activities). Effects at South Indian Lake are expected to be limited to employment and business opportunities.

Personal, family and community life can be affected by the accumulated effects of physical, biophysical, economic (including return on ownership investment in the generating station) and population changes. The experience of these changes would vary for individuals, for families and for the community as a whole, depending upon their experience of the effects of the Project. For example, residents who harvest resources in the Wuskwatim Lake area would experience the Project differently than residents who take up construction jobs at the construction site.

In addition to their own experience of positive and negative changes, effects on community life would be interpreted by residents of the Local Region according to their own outlook on their current circumstance and on the future circumstance for themselves, their families and their community (i.e., how those changes fit with their world today and their goals and aspirations for improving their world tomorrow).

NCN is in a special position of full involvement with Manitoba Hydro in planning for the Project. This means that residents of the Local Region, through NCN's Future Development Team and through community involvement processes, have participated in planning many aspects of the proposed development that can affect personal, family and community life. Key aspects of involvement have included:

- Choice of design for the dam: A critical planning decision was the selection, along with Manitoba Hydro, of a “low head” design for the dam, which would minimize flooding and effects on the environment (and, as a result, energy output will be lower compared to “high head” alternatives). Minimizing effects on the environment is a priority for NCN members (e.g., as shown in Opinion Survey results).
- Selection of alternative road and camp locations and approach to access management: NCN participated in joint planning with Manitoba Hydro of locations for the access

- road and construction camp, using criteria in three categories – effects on the environment, effects on NCN and effects on the Project (schedule and cost). Access to the Wuskwatim Lake area is an important issue for NCN – both improving access to an area traditionally used by NCN members that has been largely inaccessible since the Churchill River Diversion began to operate in 1977, and managing the effects of access by others on resources and cultural sites traditionally used by NCN. NCN and Manitoba Hydro jointly developed the approach to access management for the new access road.
- Shaping of training, employment and business benefits: NCN and Manitoba Hydro have discussed at length the scope and nature of potential training, employment and business opportunities that would be made available to residents of the Local Region if the Project proceeds. These discussions are expected to be ongoing through 2003 and will not be concluded before the Environmental Impact Statement is filed. Further, finalizing these matters involves parties beyond NCN (e.g., negotiation of a new collective agreement for the construction project between the Hydro Projects Management Association, representing Manitoba Hydro and Project contractors, and the Allied Hydro Council, a group representing unions at the site).
 - Shaping of ownership investment benefit: NCN and Manitoba Hydro have discussed arrangements for NCN investment in the generating station. If NCN chooses to participate, a revenue stream related to the Project's profitability would be forthcoming for the community in the long term. Once again, these discussions will not be finalized before the Environmental Impact Statement is filed.

Policy and other matters that affect personal, family and community life, which will not be finalized by the time of filing of the Environmental Impact Statement, introduce uncertainties to the conclusions presented in this section. These are made apparent in the individual sections that follow.

At the same time, the continuing involvement of NCN in planning processes relevant to the Project means that there would be ongoing opportunities to discuss anticipated effects on personal, family and community life with residents of the Local Region and to refine impact management measures (to enhance benefits and mitigate adverse effects) through the course of 2003. One of these processes is development of a legally binding Project Development Agreement (PDA) between Manitoba Hydro and NCN. As was done for the earlier Agreement-in-Principle (finalized in 2001), NCN intends to discuss the PDA

at length with members and to put the agreement to a secret-ballot vote of NCN members before NCN Chief and Council decide whether to approve it. This process, specified by Manitoba Hydro and NCN as a prerequisite, must be concluded prior to commencement of the Project.

If the Project proceeds, it is anticipated that NCN will integrate management of effects of the Project (mitigation, enhancement and monitoring) with NCN's own planning for the future during 2003 and beyond. For example, planning and implementation of training programs relevant to the Project are already underway (since 2002). [Table 5.3](#) provides a summary of impact management categories pertinent to all socio-economic effects (economy, infrastructure and community services and personal, family and community life) that would be integrated with NCN's own community planning for its members. The table is organized according to community planning themes developed by NCN. NCN is using this planning framework (and associated details re: scheduling, participants and detailed measures in each category) to prepare for the Project, if it proceeds. Impact management plans, along with estimated residual effects of the proposed Project, will form part of the information considered by NCN members as they vote on the proposed PDA in 2003.

Table 5.3 Categories of Impact Management to be Integrated with NCN’s Community Planning

Community Planning Theme Area	Category of Impact Management
Economic Development	<ul style="list-style-type: none"> • Training planning • Employment planning • Supports to workers in training and employment • Supports to workers and families during peak years • Extending opportunities beyond peak years
Education	<ul style="list-style-type: none"> • Training planning • Population change planning
Health and Wellness	<ul style="list-style-type: none"> • Supports to workers in training and employment • Supports to workers and families during peak years and after peak years • Population change planning • Water quality at Wuskwatim Lake • Travel safety in Wuskwatim Lake area • Mercury in fish at Wuskwatim Lake • Communication of physical/biophysical monitoring results
Physical Infrastructure	<ul style="list-style-type: none"> • Training planning • Population change planning
Recreation	<ul style="list-style-type: none"> • Population change planning
Justice	<ul style="list-style-type: none"> • Population change planning
Land use and resource management planning; environmental monitoring and management	<ul style="list-style-type: none"> • Access management planning • Travel safety in Wuskwatim Lake area • Communication of physical/biophysical monitoring results • Mercury in fish at Wuskwatim Lake
Cultural values and traditions	<ul style="list-style-type: none"> • Planning for appropriate ceremonies prior to construction • Planning culturally sensitive approach to construction activity • Contingency planning for special areas • Access management planning
All areas	<ul style="list-style-type: none"> • Planning for revenue from ownership investment

Source: NCN Community Planning Process.

5.2.3.1 Transportation, Safety and Access

Water and Trail-Based Navigation and Safety

General travel conditions between Footprint Lake and Birch Tree Lake are not expected to change with the exception of the area flooded (less than one square kilometre in area) immediately upstream of the generating station, and the area immediately downstream of the tailrace. Some increase in debris is expected on Wuskwatim Lake, but analyses show that the majority of the debris is expected to be caught against existing debris fields along the shoreline ([Volume 4](#)); at the same time, Elders indicated that they thought there would be increased floating debris as a result of the Project. Navigation safety and access issues may also arise from the presence of a large construction workforce unfamiliar with the area and local water-based travel conditions. Creation of the access road and boat launches will improve access to the Wuskwatim Lake area and downstream area, and could result in increased use of these waterways, beginning to a very limited degree during the construction phase and to a greater degree after construction is complete.

During Construction

Current risks associated with navigation between Footprint Lake and Birch Tree Lake under open water and ice conditions (as noted in Section 5.2.2.1) will remain unaffected by Project construction ([see Volume 4](#)).

During construction, there will be a large construction workforce at the camp site, (peaking during years three to six, particularly in summer months), many of whom will be unfamiliar with the Wuskwatim Lake area. Although leisure time is limited (10 hour workdays, 6 days per week), it is likely that workers will be interested in using the lake and, perhaps, surrounding areas, for traditional pursuits and recreational purposes. Manitoba Hydro and contractor staff will be made aware of the hazards of travel on Wuskwatim Lake.

During this time period, use of the access road will be restricted via a staffed gate and limited to those people working on the Project and others permitted by the Limited Partnership (see Access Management Plan in [Volume 3](#), Project Description). The Limited Partnership will decide who, beyond construction-related staff, are permitted to use the access road to travel to the Wuskwatim Lake area. It is likely that resource harvesters and commercial fishermen (who are familiar with the current travel hazards on Wuskwatim Lake and downstream on the Burntwood River) will be permitted to use the

area. If others unfamiliar with local conditions are permitted to use the area, then safety measures would be put in place if and as required (e.g., safety signage and, if determined by the Limited Partnership to be warranted, boat patrols or marking of shoals on Wuskwatim Lake). Appropriate safety measures will be discussed between NCN and Manitoba Hydro.

Wuskwatim Lake currently experiences solid lake ice during winter months and this is expected to remain unchanged during the construction period. Upstream and downstream of the lake, existing areas of limited or no ice cover would also remain unchanged. If and as required, safety measures under ice conditions would be put in place (to be discussed between NCN and Manitoba Hydro).

During Operations

Once in operation, current travel risks in these areas (under open water and ice conditions as described in Section 5.2.2.1) are expected to remain unchanged (see [Volume 4](#), Physical Environment). On Wuskwatim Lake itself, limited additional debris (due to increased rates of erosion) is expected to be caught against existing shoreline debris fields; however, existing debris issues will remain. Current conditions downstream of Taskinigup Falls on the Burntwood River are considered to be hazardous. The primary changes to navigation would be limited to areas immediately upstream of the generating station, which will be flooded (less than one square kilometre) and immediately downstream of the station, where water level changes within the day would be less than 1.3 metres (4.2 feet) under normal operating conditions (these changes would decrease to less than 0.5 metres by Opegano Lake). This could be exceeded under emergency conditions (e.g., coincident loss of Hydro DC transmission lines during low flow conditions on the Burntwood River and only one turbine in operation at the generating station). Under emergency conditions, water-level fluctuation immediately downstream of the station could be 2.75 metres (9 feet) for a few hours, which would be smoothed out by Opegano Lake. (See [Volume 4](#) for further information).

The access road and the creation of boat launches on Wuskwatim Lake (about 1.8 kilometres from the generating station and downstream on the Burntwood River – intended for emergency purposes; travel will not be recommended on the Burntwood River) are likely to increase the number of people using the Wuskwatim Lake area for traditional pursuits and recreation. The number of people gaining access to the Wuskwatim Lake area, as well as other areas upstream and downstream of the generating

station, will depend on the final terms of the Access Management Plan, to be developed by the Limited Partnership before the end of the construction phase.

It is likely that some of those people accessing Wuskwatim Lake during operations will not be familiar with the area. If and as appropriate, safety measures under open water conditions would be put in place (to be discussed between Manitoba Hydro and NCN); for example, signage regarding safety concerns upstream and downstream of the generating station site and, if determined by the Limited Partnership to be warranted, boat patrols and marking of shoals on Wuskwatim Lake.

Wuskwatim Lake currently experiences solid lake ice during winter months and this is expected to remain unchanged during operations, except for a small area of open water immediately upstream of the generating station. Upstream and downstream of the lake, current areas of limited or no ice cover would also remain unchanged (see [Volume 4, Physical Environment](#)). If and as required, safety measures under ice conditions would be put in place (to be discussed between NCN and Manitoba Hydro). If determined by the Limited Partnership to be warranted, measures could include marking areas unsafe for ice travel and an extension of Manitoba Hydro's Safe Ice Program in the Wuskwatim Lake area.

Eventually, if travel across the completed dam is permitted, access would be improved to land trails on the south side of the Burntwood River. Access to these areas is currently limited because of navigational difficulties on the Burntwood River.

Road Traffic and Safety

All access to the construction site will be made via PR 391, which runs east-west between Thompson and Lynn Lake. The Project access intersects with PR 391 approximately 27 kilometres (17 miles) west of Thompson. PR 391 is expected to experience between 30 and 75 additional vehicles per day between Thompson and the junction of the access road, depending on the construction year and season. The peak period for Project-related traffic on PR 391 is expected to be during the summer season of the core construction period (Years 3 to 5) (ND Lea 2002).

Additional effects may arise as a result of workers travelling between the Project site and Thompson for recreational purposes on evenings and days off (all employees are expected to have Sundays off). This will increase traffic levels and could result in

incidents of reckless or impaired driving (although the camp-based tavern is designed, in part, to limit the desire of workers to travel to partake in such activities).

Construction Phase

PR 391 is capable of safely accommodating all project-related traffic. During construction, Project-related traffic includes the transportation of equipment, construction materials and other goods (e.g., deliveries of mail and food), as well as the movement of employees and other visitors between the construction site and other destinations.

The number of trips made to and from the Project construction site will depend largely on the year of construction and season. It is assumed that only five per cent of the workers will commute back and forth to either Thompson or Nelson House (ND Lea 2002). Table 5.4 below describes the overall estimated traffic volumes on PR 391 (rounded to the nearest five vehicles) between the Wuskwatim site and Thompson for each season during Project construction.

Table 5.4 PR 391 Forecasted Project-related Daily Traffic

Vehicles/Day (In and Out)	Project Start-Up (Y1 and Y2)		Core Construction (Years 3-5)		Project Wrap-Up (Year 6)	
	Winter	Summer	Winter	Summer	Winter	Summer
Trucks	0	10	15	25	10	15
Passenger Vehicles	0	30	20	50	20	20
Total Vehicles	0	40	35	75	30	35

Source: ND Lea 2002.

The largest increase in traffic is expected to occur during the summer seasons of the core construction period (Years 3 to 5 during Stage 2 construction). During this time, an additional 75 vehicles/day are expected to be travelling on PR 391. The expected volume of traffic in the summer of 2007 based on normal traffic growth is 1,035 vehicles/day in Section A of PR 391, for a total of 1,100 vehicles/day during the core construction period. In Section B, the expected 2007 background traffic volume on PR 391 will be 580 vehicles/day, for a total of 655 vehicles/day during the core construction period. Secondary arterial highways, such as PR 391, are designed to carry up to 6,000 vehicles/day, depending on geometric features. Therefore, PR 391 can be expected to reasonably accommodate the forecast traffic volumes (ND Lea 2002).

Accidents per year on PR 391 have been forecast with and without the added Project-related traffic during construction, assuming the accident rate remains constant. As displayed in Table 5.5 below, increases in accidents due to Project-related traffic are expected to be small.

Table 5.5 PR 391 Risk Analysis

Section of PR 391	2007 Accidents without Project	2007 Accidents with Project
Section A	7	7
Section B	8	9

Source: ND Lea 2002.

Given the proximity of the Project construction camp to Thompson, it is anticipated that many workers may travel into Thompson on Saturday night (Sunday is a day off) for recreational activities. With a peak workforce of approximately 540 workers during Stage 2 of construction (Years 3 to 6), this could mean a large number of additional vehicles on PR 391 during Saturday evening hours and potentially on Sundays. This traffic will likely overlap with other weekend traffic to and from Thompson; during the interviews with key people in Thompson, a number of individuals noted migration from outlying communities of over 1,000 people on the weekends. However, these trips will occur on days when there is less Project-related traffic (e.g., trucks hauling Project construction materials). Depending on the individual and recreational activities pursued in Thompson, increased volumes of traffic on PR 391 during weekends also have the potential to result in increased accidents and incidents of impaired or reckless driving, although the camp-based tavern is intended to mitigate these effects.

During the peak construction seasons (May to October) of Stage 2 it may be necessary to monitor weekend traffic volumes on PR 391 for potential accidents and other concerns. If problems arise, mitigation approaches will need to be considered. A bus between the construction camp and Thompson on Saturday nights and Sundays could be provided, if necessary. This would help to reduce additional traffic volumes on PR 391, as well as possible incidents of accidents. The demand for this service would dictate the timing, frequency and number of trips made available to the workers.

The access road between PR 391 and the Wuskwatim site will improve entry to the Wuskwatim Lake area, which currently is difficult to reach. Access will be limited during the construction phase (via a staffed gate at PR 391 operated 24 hours per day and 7 days per week), according to the Access Management Plan, to those associated with Project

construction and to others deemed by the Limited Partnership to be permitted to use the access road (e.g., this is likely to include NCN resource harvesters).

Recreational snowmobile traffic within the access road right-of-way and construction site/camp area will not be permitted during the construction phase.

Operations Phase

During the operations phase, there are no anticipated effects to traffic safety along PR 391 as a result of the Project. The generating station will be highly automated, with few employees (only about six workers are required at the site) and minimum, infrequent equipment and materials requirements.

Once the construction phase is completed, the staffed gate on the access road at the junction of PR 391 will be removed. Use of the access road will be managed by the Limited Partnership. The operations phase portion of the Access Management Plan will be developed before the end of the construction phase by the Limited Partnership (see [Volume 3](#), Project Description). It is expected that consideration of use of the road right-of-way by snowmobilers will be included in this Plan.

5.2.3.2 Aesthetics

The specific sources of effect on aesthetics in the Wuskwatim Lake area (Wuskwatim Lake, Wuskwatim Falls and Taskinigup Falls) are:

- The inundation of both Wuskwatim Falls (as a result of 37 hectares of Project flooding between Taskinigup and Wuskwatim Falls) and Taskinigup Falls (as a result of generating station infrastructure)
- The Project's physical infrastructure on the landscape, including:
 1. The access road (479 hectares)
 2. Granular borrow areas (10 per cent of 644 hectares)
 3. Impervious borrow areas (26 hectares), and
 4. The construction camp and other structures associated with the generating station (147 hectares).
- Increased turbidity and woody debris expected on Wuskwatim Lake.

Construction Phase

During Project construction, there will be changes in the aesthetics along the route for the access road and in areas in and around the construction site. The latter includes the borrow areas (granular and impervious) and infrastructure and permanent facilities at the generating station site (construction site, work areas and camp). Additionally, Wuskwatim Falls, at the outlet of Wuskwatim Lake, will be inundated and a small flooded area of 37 hectares (less than one-half square kilometre) will extend between Taskinigup Falls, the site for the generating station, and Wuskwatim Falls.

There may also be temporary, visible changes to water quality during specific activities (e.g., removal of the cofferdams would release fine sediments into the water). These effects would generally only occur for a short time in association with the specific activity, and would typically be limited to the construction site, though some effects could extend downstream. (see [Volume 5](#), Aquatic Environment).

During Project construction, use of the access road will be restricted via a staffed gate and limited to those people working on the Project and others permitted by the Limited Partnership (see [Volume 3](#), Project Description). For residents of the Local Region who currently use the Wuskwatim Lake area, as well as others in the community who have an attachment to the Wuskwatim Lake area, obvious negative change will be evident in the aesthetic quality of the area with the addition of the physical structures (including loss of the Wuskwatim and Taskinigup Falls), work area, access road and borrow areas. New access to the area is likely to mean more direct exposure of residents to these aesthetic changes.

No specific mitigation measures for aesthetics are considered to be necessary during Project construction.

Operations Phase

During operations, the following changes in aesthetics would occur:

- Upon completion of construction and final commissioning of the generating station, all support infrastructure not required for the operation and maintenance of the generating station will be cleaned up, dismantled and removed from the site. The

various clean-up areas will be rehabilitated to promote the re-growth of natural vegetation.

- Elevated erosion rates following the start of Project operation will result in increased levels of woody debris being added to Wuskwatim shorelines and sediments to water in the nearshore area, particularly after storms (see [Volume 4](#), Physical Environment).
- Physical presence of the generating station and associated facilities.
- Elevated water levels on Wuskwatim Lake, compared to the water level fluctuations which currently occur. Flooding of the area between Taskinigup Falls and Wuskwatim Falls.

Residents of the Local Region who currently use the Wuskwatim Lake area, as well as others in the Region who have an attachment to the area (for example, there are many legends associated with Taskinigup Falls), will have more direct exposure to negative aesthetic changes in the Wuskwatim Lake area due to increased accessibility. The most noticeable of these will be the inundation of Wuskwatim and Taskinigup Falls, and the addition of Project-related physical structures and the access road.

Potential future tourism in the Wuskwatim Lake area (none occurs there now) would be influenced by the future aesthetic quality of the area. Eco-tourism enthusiasts may be interested in more pristine environments, while others may be interested in seeing the generating station and associated infrastructure (see [Volume 7](#), Resource Use).

Other than the rehabilitation activities previously mentioned, no specific mitigation measures for aesthetics are considered necessary during the Project operation phase.

5.2.3.3 Community Health

This section presents potential effects of construction and operation of the proposed Project on health of residents in the Local Region. Both direct and indirect sources of change from the Project were examined. Potential direct pathways of change from the Project to human health are expected to be limited to the Wuskwatim Lake area. Both potential changes in water quality in areas where water is consumed or used by people, as well as potential changes in resources harvested and used by people – specifically, mercury in fish used domestically – were examined.

Beyond direct sources, potential changes in the “determinants” of community health (or factors affecting health) as a result of the Project were examined to the extent possible. These include changes in factors that indirectly can affect the health of people, such as

housing conditions and income. Population health models identify a broad range of physical, social and individual factors that interact and work as a whole to affect the health of individuals (Frankish *et al* 1996, Health Canada 1999). In the case of the Project, key potential effects on health determinants include: income, employment and training mainly during the construction phase for residents of the Local Region; potential initial crowding of housing if large numbers of members return to Nelson House; concern among residents of the Local Region that environmental changes from the Project will be comparable to environmental change that occurred as a result of the Churchill River Diversion; exposure of newcomers (via new access to the area) to current travel hazards on Wuskwatim Lake; and, in the long term, increased revenue from the investment in the Project, to deal with community priorities.

Although it is possible to list the above key potential effects on health determinants, the ability to draw firm conclusions with any precision about these indirect effects of the Project on human health is very limited. Several sources of uncertainty are associated with any such assessment, including:

1. Health determinants are affected by many factors beyond those which may be connected to the Project, thus it is very difficult to isolate the specific effects of Project changes.
2. Some influences may be positive and others negative; indeed, the same source of change can have both positive and negative consequences in some cases.
3. There are uncertainties and limitations in direct changes noted, even before considering their subsequent effects on health (e.g., degree of in-migration to Nelson House).

Despite the above limitations, the analysis is useful as input to NCN's community-based planning for the future; that planning will incorporate potential effects of the Project on people. Monitoring of socio-economic changes and taking steps to manage changes are part of NCN's efforts, in particular, to make the most of the Project for their members.

Construction Phase

During the construction phase, no Project-related effects on human health are expected as a result of water quality effects. Changes in water quality potentially used by people are expected to be limited to changes in turbidity and isolated to the area in the vicinity of the construction site at Taskinigup Falls, Wuskwatim Falls and immediately upstream and

downstream of the construction site. Biophysical studies (see [Volume 5](#), Aquatic Environment) have concluded that water quality changes will be limited to increased turbidity of water immediately around construction work areas that extend into the river. Periodically, such as when cofferdams are removed, sediment will be added to the river in the immediate area of the work site and may be carried downstream.

The construction camp will house construction workers adjacent to the work site; the workforce will vary over the six-year construction period and will generally be higher during the summer construction season (typically 145 to 540 workers during the summer season and 45 to 400 workers during the slower winter months). The work camp will include treatment of liquid waste; effluent will meet provincial waste treatment standards (see [Volume 3](#), Physical Environment).

Human consumption of untreated surface water generally is not a recommended practice. Currently, the small number of NCN resource harvesters who use the Wuskwatim Lake area (about four to ten commercial fishermen; small number of others) do, however, typically draw surface water from the lake (drawing water from offshore areas and/or boiling water before use) when they are camped in the area or bring bottled water from home (NCN Resource Program staff, personal communication, 2002; North/South Consultants Inc. Staff, personal communication, 2002). For these resource harvesters, water quality for the main part of Wuskwatim Lake is not expected to change during the construction phase ([Volume 5](#), Aquatic Environment). Camping activity at Wuskwatim Lake may increase to a limited extent during the construction phase, by virtue of improved access to the area (access will be restricted during the construction phase to those permitted by the Limited Partnership; see Access Management Plan in [Volume 3](#) Project Description). Areas of diminished water quality in and around the construction site and camp area will be off-limits (for safety reasons) to non-construction persons. Water safety measures (boiling surface water or bringing bottled water from elsewhere) should continue.

Since no water quality changes are expected beyond the immediate area of the construction site and camp area, water-related problems currently experienced at Nelson House will remain unchanged by physical effects of the Project during the construction phase.

As noted in Section 5.2.3.1 Transportation Safety, measures to protect newcomers to the Wuskwatim Lake area (camp workers and others), from injuries due to travel hazards on

Wuskwatim Lake (i.e., debris in open water season and thin ice in certain areas during winter) would be undertaken, if and as required.

During the construction phase, indirect effects of the Project have the potential to affect determinants of health (or factors affecting health) for individuals, families and the community as a whole. These effects and potential impact management measures (enhancements for benefits and mitigation for adverse effects) are being considered by NCN as part of their community-based planning for the future. These potential effects and associated impact management measures are as follows:

- Income, Employment and Training: New income for construction workers and their families in Nelson House and South Indian Lake (about 81 to 93 peak positions during Years 1 and 2 and between 87 and 128 peak positions during Years 3 to 6) could help to improve the standard of living of these families (particularly with regard to diet, which was identified as a key consequence of current poverty issues), at least in the short term. Other sections of this volume (see Section 3.4.3 Economy) discuss impact management measures intended to assist and encourage residents of the Local Region to participate in construction phase employment and business opportunities and measures intended to support workers in order that they can stay in training and employment opportunities. In addition, NCN is focused on ways to extend and sustain economic opportunities beyond construction opportunities. These efforts and supports to families (see Section 5.2.3.4 Social Well-being) are intended to make the most of the short-term, construction-phase economic changes for workers and their families and to lessen potential “boom and bust” effects of the construction phase. If the level of income can be sustained after the project is completed, then there would likely be positive effects on the health of workers and their families. NCN’s emphasis on coordination among service providers will be important in supporting workers and their families in the community.
- Population Change: At the outset of the construction phase, and possibly even prior to construction when community-based training is made available, in-migration of NCN members may occur. Section 4.2.3 (Infrastructure and Services) notes that predicting the extent of potential in-migration (and possibly some out-migration as well) is difficult. Therefore, it is essential that NCN be prepared with effective monitoring methods and plans to deal with population change if and when it occurs. As a determinant of health, avoiding as much as possible additional crowding in housing

already in short supply would lessen potential health problems associated with new crowding (e.g., respiratory ailments). In addition, new population may stretch existing health services beyond the limits of their effectiveness.

- Local Resident Concern re: Environmental Change: NCN reports that many residents are concerned that environmental changes from the Project will not be as predicted in environmental studies, but will be similar to those experienced as a result of CRD. This concern could add to personal worries of residents. Full and frequent communication to residents of results of planned physical and biophysical monitoring programs (see [Volume 4](#), Physical Environment, [Volume 5](#), Aquatic Environment, and [Volume 6](#), Terrestrial Environment) will be important so that residents are aware of actual changes as they occur. Communication of results of periodic health monitoring would also be prudent.

Operations Phase

Physical studies ([Volume 4](#), Physical Environment) have concluded that water level and flow changes will not extend as far as the communities of Nelson House or South Indian Lake. Water quality problems reported by residents of Nelson House are likely to remain unaffected by physical effects of the Project.

During the operations phase, water quality is largely expected to remain unchanged in the majority of Wuskwatim Lake and water quality in near shore areas is expected to change only in terms of turbidity, particularly after stormy weather ([Volume 5](#), Aquatic Environment). Increased turbidity of water will occur in nearshore areas once the Project is operating as a result of accelerated erosion for approximately the first 25 years of the operations phase.

NCN resource harvesters who use the Wuskwatim Lake area typically draw surface water from the lake (typically drawing water from offshore areas and/or boiling water before use) when they are camped in the area (or bring bottled water from home) (NCN Resource Program staff, personal communication, 2002; North/South Consultants Inc., personal communication, 2002). These safe water practices should continue during the operations phase for resource harvesters and others who may use the Wuskwatim Lake area as a result of improved access. Results of water quality monitoring in Wuskwatim Lake (undertaken generally for the Project), as well as continued need for safe water practices, would be included in reporting of results of biophysical monitoring to community residents, including resource harvesters.

Changes in the quality of fish used domestically by residents of the Local Region, particularly the potential for increased mercury in fish as a result of physical changes to water levels and flows and associated erosion, were examined. Biophysical studies conclude that the Project will not change mercury in fish in Threepoint and Footprint Lakes, where the majority of domestic fish are harvested for NCN members at Nelson House, since water level and flow changes are not expected to extend upstream of Early Morning Rapids (see [Volume 5](#), Aquatic Environment).

Biophysical studies conclude that, in Wuskwatim Lake, mercury levels in lake whitefish will remain below 0.2 parts per million (ppm) (the guideline for domestic consumption), could increase up to 0.35 ppm in walleye (pickerel) and could reach 0.5 ppm in pike (jackfish) (see [Volume 5](#), Aquatic Environment). These effects may develop within three to five years after the operations phase begins and could last for about ten years. ([Volume 5](#), Aquatic Environment). Uncertainty in analysis means that it will be prudent to monitor mercury in fish, at least during the initial five to ten years of the operations phase.

While there has been limited domestic use of fish from Wuskwatim Lake in recent years, because the area was difficult to access, new access by Local Region residents and others could mean that fish could be harvested and used in local diets. Analysis (based on calculations of meals per week for a 70 kilogram male) indicates that restrictions in consumption of walleye (2.2 meals per week) and pike (1.6 meals per week) would be prudent, particularly in women of child-bearing years (15 to 39 years) who should be restricted to half this amount. By comparison, these restrictions are slightly less than would apply for Footprint Lake (1.1 meals per week for walleye and 1.3 meals per week for pike) and slightly more than would apply for Leftrook Lake (3.1 meals per week for walleye and 3.3 meals per week for pike). Both lakes are currently used for domestic harvest. Whitefish consumption should be unaffected, with calculated restrictions for safe consumption of 6.5 meals per week at Wuskwatim Lake. Any actual recommendations to local residents regarding reduced use of walleye and pike in the future should be based on actual monitoring results.

As noted in Section 5.2.3.1, Transportation Safety, measures to protect newcomers to the Wuskwatim Lake area from injuries due to travel hazards on Wuskwatim Lake (i.e., debris in open water season and thin ice in certain areas during winter) would be undertaken, if and as required.

During the operations phase, indirect effects of the Project have the potential to affect determinants of health for individuals, families and the community as a whole. The final magnitude and significance of these changes is uncertain. These effects and potential impact management measures (enhancements for benefits and mitigation for adverse effects) are being considered by NCN as part of their long term community-based planning for the future. These potential effects and associated impact management measures are as follows:

- Local Resident Concern re: Environmental Change: NCN reports that many residents are concerned that environmental changes from the Project will not be as predicted in environmental studies, but will be similar to those experienced as a result of CRD. These concerns are likely to intensify during the operations phase. Full and frequent communication to residents of results of planned physical and biophysical monitoring programs (Volume 4, Physical Environment, Volume 5, Aquatic Environment, and Volume 6, Terrestrial Environment) will be important so that residents are aware of actual changes as they occur. Communication of results of periodic health monitoring would also be important.
- Revenue from Investment in Project: In the long term, if NCN chooses to invest in the Project, revenue would be forthcoming from that investment. The timing and scale of that revenue stream are not yet finalized. If and when the revenue stream begins, NCN's use of these funds could potentially contribute to improving determinants of health (e.g., new housing, economic development).

5.2.3.4 Social Well-Being

This section presents potential effects of construction and operation of the proposed Project on social well-being of residents in the Local Region. Like community health (Section 5.2.3.3) and culture (Section 5.2.3.5), social well-being is affected by a broad range of factors, including perspectives of people about their current circumstances and their future. This section presents a summary of the main effects of the Project on social well-being.

During construction, they include:

1. change in patterns of work and family life for those who participate in construction employment and business opportunities, including “boom and bust” effects
2. effects of population change

3. physical changes and changes in accessibility to cultural features in the Wuskwatim Lake area (discussed in greater detail in Section 5.2.3.5).

During the operations phase, they include:

1. change in patterns of work and family life (post-construction “bust” effect)
2. physical changes and changes in accessibility to cultural features in the Wuskwatim Lake area (discussed in greater detail in Section 5.2.3.5)
3. in the long term, new revenue for community priorities as a result of return on investment in the Project.

As noted elsewhere, the experience of the Project will vary for individuals and families, depending upon their specific experience of sources of change from the Project. Determining, on balance, whether effects of the construction and operation of the Project will result in positive or negative social well-being for the community as a whole is difficult. First, current discussions between Manitoba Hydro and NCN with respect to key factors that may materially affect social well-being (e.g., employment and business participation) are not concluded. Further, evaluating the meaning of effects of the Project for residents of the Local Region is a key purpose of the extensive planning work currently being undertaken by NCN, in some cases jointly with Manitoba Hydro and the **Environmental Management Team**. The potential effects summarized here (including more detailed analysis undertaken for NCN and Manitoba Hydro) and associated possible measures to manage change are being examined by NCN and integrated into community planning efforts for the future currently underway. One of the goals set out by NCN in undertaking this planning and in considering whether to participate in the proposed Project is to improve the social well-being of NCN members.

Construction Phase

The following is a summary of main effects of the Project during the construction phase that have the potential to affect social well-being. It is difficult to estimate the magnitude of these changes with certainty, because they are affected in large measure by the outcome of impact management planning, in concert with NCN’s own community planning for the future, as well as other factors.

- Change in patterns of work and family life for those participating in construction employment and business opportunities: New training, employment and business

opportunities have the potential to generate new household income and self-esteem for workers. NCN's approach to training and construction employment emphasizes development of skills by local residents that are relevant in the region beyond opportunities presented by construction of hydroelectric dams. The intent is to use these opportunities as a catalyst to build a skilled workforce and to actively pursue other economic development opportunities that can sustain work for local residents. A training plan is currently being implemented and employment measures are being pursued in a way that is intended:

1. to maximize the involvement of local residents in opportunities
 2. to lessen the "boom and bust" effect that accompanies a major construction project of this kind. At the same time, impact management measures are being examined to deal with preparing workers (particularly those who may have been unemployed for some time) for the stresses of an intense work regime, the separation of living at a work camp (6 days on and one day off each week) and the sudden increase in income. These measures are in the categories of retention planning, money management and life skills training and collaboration between those providing services to families and those focusing on training and employment. The objective is to make new work opportunities positive forces for social well-being in the community. Periodic surveys of workers and their families are planned to identify issues as they arise in order to adjust impact management measures.
- Returning population: Particularly at the outset of the construction phase, and even earlier when training is offered, NCN members who have migrated elsewhere for economic reasons may now feel they can return to Nelson House (discussed in Section 4.2.3). As noted, in-migration to South Indian Lake is not expected, given the distance to the construction site. In addition, some out-migration may also occur by those with new construction income (e.g., to purchase a dwelling). Returning population can be a source of positive change for the community, both for those who return and for the community as a whole. At the same time, if in-migration results in crowded housing conditions for a substantial length of time, this also may lead to stress, reduced health (as noted earlier) and social problems associated with crowding. Since the precise level of in-migration is difficult to predict in advance, monitoring and advance contingency planning are being considered by NCN as part of their community planning for the Project.

- Physical changes and changes in accessibility to cultural features in the Wuskwatim Lake area: Beginning during the construction phase, changes in physical features important to the cultural landscape of NCN (i.e., changes to Taskinigup and Wuskwatim Falls themselves) and limited new accessibility of NCN members to the Wuskwatim Lake area could lead to changes in social well-being. These are discussed in greater detail in Section 5.2.3.5. Measures to help the community deal with the loss of the falls and to take advantage of new access opportunities to culturally important areas are being considered by NCN.

Operations Phase

The following is a summary of main effects of the Project during the operations phase that could affect social well-being. It is difficult to estimate the magnitude of these changes with certainty, as they are affected in large measure by the outcome of impact management planning, in concert with NCN's own community planning for the future, as well as other factors.

- Change in patterns of work and family life for those participating in construction employment and business opportunities: To deal with effects associated with the decline of construction-phase opportunities, NCN is pursuing an economic development strategy intended to sustain and extend, to the extent possible, employment opportunities for workers. Continued periodic surveys of workers and their families are planned after construction is complete to provide information to those addressing economic and social well-being in the community.
- Physical changes and changes in accessibility to cultural features in the Wuskwatim Lake area: Discussed in greater detail in Section 5.2.3.5, the opportunity for NCN members to renew visits to cultural sites in the Wuskwatim Lake area has the potential to strengthen culture and, therefore, contribute to social well-being. At the same time, managing access by others to protect those sites is also important and will be dealt with in the Access Management Plan. Measures to address NCN concerns about physical effects on key cultural sites during the operations phase are also planned.
- In the long term, new revenue available to the community: In the long term, new revenue, as a result of NCN's possible ownership participation in the Project, would

be available to address community priorities. These priorities are likely to contribute, to some extent, to the goal of improved social well-being.

5.2.3.5 Culture

This section presents potential effects of construction and operation of the proposed Project on the culture of residents in the Local Region. Like community health (Section 5.2.3.3) and social well-being (Section 5.2.3.4), culture is multi-faceted and is affected by many factors. Cultural effects are difficult to assess because so much depends on the strength of the cultural group and the prevailing attitudes, opinions and beliefs of its members. The Project will affect some aspects of NCN's cultural environment. Of the cultural indicators presented in Section 5.2.2.5, language, traditional knowledge, cultural practices and health and wellness, including spirituality, are considered to be most vulnerable and are expected to be affected by the Project. More minor effects on other cultural indicators are also possible. This section presents a summary of the potential main effects of the Project on culture and proposed mitigative measures. While mitigation measures are proposed, it must be remembered that cultural survival cannot be forced upon a cultural group. Decisions to work to preserve language, enhance world view, remember Traditional Knowledge and practice one's culture are, ultimately, personal. As such, the final magnitude and significance of effects on culture are uncertain.

During the construction phase, sources of change include:

1. exposure of workers from the Local Region to camp life (separation during work days; interaction with non-local workers)
2. training, employment and income for residents of the Local Region who participate in construction employment and business opportunities
3. effects of population change
4. physical changes and changes in accessibility to cultural features in the Wuskwatim Lake area
5. concern by residents of the Local Region about physical changes.

During the operations phase, sources of change include:

1. physical changes and changes in accessibility to cultural features in the Wuskwatim Lake area
2. concern by residents of Local Region about physical changes

3. in the long term, new revenue available for the community.

Construction Phase

The following is a summary of the main estimated effects of the Project, during the construction phase, on four cultural indicators considered to be vulnerable (without the Project) in the Local Region. The final magnitude of these changes is uncertain.

- Language: Accommodation is provided for all workers at a construction camp adjacent to the construction site. It is likely that many local workers would stay in the construction camp rather than undertake a daily commute from Nelson House or Thompson each workday. During the first two years of the construction phase, it is expected that the majority of workers would be northern Aboriginal residents, many of whom are estimated to be Aboriginal residents of the Local Region. During this period, the opportunity to continue to use the Nehethow-we-win (Cree) language is likely to continue, unless differences in dialect among workers mean that they choose to speak English. During Years 3 to 6 of construction, when the proportion of Aboriginal residents from the Local Region, Project Region and Northern Region is estimated to be smaller, there would be more exposure of local workers to other languages and potentially diminished opportunity during work hours to speak Nehethow-we-win.
- Traditional Knowledge: Traditional Knowledge has been part of the studies of the effects of the proposed Project on the physical, biophysical and socio-economic environments, including culture. Collecting and highlighting Traditional Knowledge for the EIA has continued the process of making residents aware of Traditional Knowledge among NCN members. Results in audio and video tape and written form have been archived for the ongoing use of NCN. NCN's Traditional Knowledge Committee has expressed an interest in continuing to collect and preserve Traditional Knowledge for education, resource management, and cultural and other purposes.
- Cultural Practices: Beginning during the construction phase, Taskinigup and Wuskwatim Falls will be lost as the physical works of the Project are built. Many residents of the Local Region feel responsibility for the spirits and legends in the area. For cultural practices, loss of the falls could mean a loss of the physical markers associated with ancient legends and could disturb the spirits there. NCN members feel that appropriate ceremonies and prayers, involving the whole community, should be

undertaken in advance of any changes at the construction site. Further, physical changes should be undertaken with cultural sensitivity (for example, offerings of tobacco as new areas are disturbed). Beginning during the construction phase, access to the Wuskwatim Lake area would be improved to a limited degree. Improved access could enhance cultural practices pertaining to important ceremonial sites in the Wuskwatim Lake area. For the past 25 years, since CRD began operation, very limited use has been made of these important ceremonial sites because travel to the area is dangerous. The access road would provide the opportunity for NCN members to visit these important sites once again. At the same time, risk of misuse of the sites (e.g., through access by people unaware of their importance) would need to be addressed. During the construction phase, the Access Management Plan indicates that specific permission would need to be granted by the Limited Partnership to use the new access road (Volume 3). In addition, measures to orient non-local construction workers to cultural sensitivities in the area would include respect for these cultural sites. A management plan will also be prepared with respect to cultural and heritage sites in the area (see Volume 9).

- Health and Wellness: For those local residents who successfully participate in training and employment, self-esteem may be strengthened, contributing to general health and wellness. On the other hand, job-related stress could have a negative effect on health and wellness. As noted in Section 5.2.3.3 (Community Health) and Section 5.2.3.4 (Social Well-being), measures to assist workers to participate in these opportunities are planned. As noted in Section 5.2.3.3, returning population may be positive for Nelson House, but if new population leads to crowded housing conditions, health and wellness could be affected. New population could strain resources, including services pertaining to law and order (a cultural indicator). Particularly among Elders, there is concern that the physical changes that would result from the Project would be like those that occurred with the CRD in the late 1970s. This worry could affect the cultural indicator of health and wellness. As noted in Section 5.2.3.3, Community Health, measures to inform residents of the Local Region of physical changes as they occur (i.e., through monitoring studies) would be important, beginning during the construction phase.

Operations Phase

During the operations phase, following is a summary of the main estimated effects of the Project on four cultural indicators currently considered to be vulnerable (without the Project) in the Local Region. The final magnitude of these changes is uncertain.

- Language: At the end of the construction phase, the presence of the construction camp and non-local workers would have left the Wuskwatim Lake area. Therefore, associated effects on language would not carry on during the operations phase.
- Traditional Knowledge: During the operations phase, physical changes associated with the Project (i.e., flooding of one-half square kilometre at Wuskwatim Falls; Wuskwatim Lake kept at upper end of current range, including submerging of Manitou Island) would create further changes in the landscape that NCN members once knew through Traditional Knowledge. Some Elders expressed concern that water would also find its way to important ceremonial sites in the Wuskwatim Lake area. While EIS studies conclude that this should not happen, a committee of NCN members and Manitoba Hydro staff will develop a monitoring program for this area and identify potential mitigative actions that could be taken if monitoring shows that these areas are threatened. Renewed access to the Wuskwatim Lake area (cut off for many NCN members for about 25 years as a result of CRD) would provide the opportunity for renewed observation of the land and water environments in the Wuskwatim Lake area and, with completion of the dam as a means to cross the river, possibly areas south of the Burntwood River. Apart from the physical changes noted above, CRD-related effects on the environment and local residents' ability to observe and know that environment would continue.
- Cultural Practices: New access to ceremonial sites in the Wuskwatim Lake area could encourage a return to former cultural practices by NCN members in the Local Region. Ceremonies undertaken in 2000 at sites in the Wuskwatim Lake area provided the opportunity for some local residents to participate for the first time in a generation. These practices could continue with the new access road. Visits by people not familiar with the importance of these sites could pose risks to the sites. The operations portion of the Access Management Plan ([Volume 3](#), Project Description) will address measures to limit such visits, to the extent possible. In addition, a

management plan will be prepared with respect to cultural and heritage sites in the area (see Volume 9).

- Health and Wellness: During the operations phase, local residents (particularly Elders) would continue to worry that changes from the Project would be of the scale that occurred as a result of the CRD project in the late 1970s. As noted in Section 5.2.3.3, Community Health, measures to inform residents of the Local Region of physical changes as they occur (i.e., through monitoring studies) would be important, beginning during the construction phase.

In the long term, new revenue would be available for NCN, as a result of their investment in the Project. These funds would be used for priorities set out by NCN. Strengthening culture has been expressed as an important theme for the future in NCN's community planning. If a portion of new revenue is focused on culture, then these four vulnerable indicators (as well as other cultural indicators) could be strengthened through specific actions supported by this revenue.

5.2.3.6 Community Organization and Governance

This section presents potential effects of construction and operation of the proposed Project on community organization and governance of NCN.

Prior to and during construction, these effects include:

1. participation in joint planning for the Project, with Manitoba Hydro and other parties
2. development of a new organization to deal with NCN's participation in the Limited Partnership
3. response by key NCN service providers to Project-related changes.

During the operations phase, Project effects would stem mainly from the stream of income from NCN's investment in the Project.

Construction Phase

The following is a summary of main effects of the Project during the construction phase having the potential to affect community organization and governance. Overall, the Project experience prior to the operations phase is expected to strengthen and extend skills and capability of NCN's community organization and governance.

- Participation in joint planning for the Project, with Manitoba Hydro and other parties: Since 1997, NCN leadership, key staff and advisors (the Future Development Team) have participated in joint Project planning with Manitoba Hydro and, from time to time, other parties as well. Currently Future Development Offices are in place in Nelson House (with about 15 staff) and South Indian Lake (with two staff) to deal with this pre-construction phase. Particularly in 2003, senior staff involved in the Future Development Team will continue to face heavy workloads, particularly through to the PDA vote and beyond to establishment of the Limited Partnership. At the same time, the process is helping to develop new skills in NCN staff. Once the Limited Partnership is in place, if the Project proceeds, permanent staff would oversee its implementation. This would include coordination with NCN service providers to monitor and address Project effects on the community.
- Development of new organization to deal with NCN's potential participation in the Limited Partnership: If the Project proceeds, NCN would require a new organization to govern and organize NCN's participation in the Limited Partnership. The framework of this organization has been developed and discussed by NCN and Manitoba Hydro.
- Response by key NCN service providers to Project-related changes: Beginning during 2003, NCN service providers would need to be engaged in internal planning to prepare for community change as a result of the Project (see discussion of community planning in Section 5.2.3.7 NCN Goals and Plans). If the Project proceeds, a new organizational requirement of the NCN government would be to develop coordination and communication mechanisms among key NCN service providers who would be involved in impact management (enhancement and mitigation measures).

Operations Phase

During the operations phase, effects on community organization and governance would stem mainly from the stream of income from NCN's investment in the Project. As noted in Section 3.2.3.2 Ownership Participation, the scale of the revenue stream is substantial. New mechanisms would need to be established to govern use of the revenue – to identify community priorities, undertake decision-making, oversee expenditure of funds and undertake accounting, audit and reporting functions.

5.2.3.7 NCN Goals and Plans

NCN goals and plans will play a role in shaping the future of the Local Region, particularly for members resident at the community of Nelson House. NCN's vision, goals and plans will provide a context against which members are likely to compare the benefits and drawbacks of the proposed Project for themselves, their families and the community as a whole. Indeed, the significance of change, and sometimes even the direction of change (positive or negative), is subject to people's perspectives about how those changes fit with their world today and their goals and aspirations for improving their world tomorrow.

NCN is well-positioned to consider the question of compatibility of proposed Project effects with the Cree Nation's future vision, goals and plans for the future. Since 1997, NCN has been engaged with Manitoba Hydro in joint planning activities, including development of an Agreement-in-Principle (AIP) (see [Appendix 5](#)) and eventually a PDA. Ultimately, referenda at both the AIP stage and the PDA stage will provide a clear indication of whether the Project is consistent enough with the goals and plans of NCN that it should proceed, from the perspective of residents of the Local Region. (The AIP was ratified in 2001, indicating that members wanted to continue to the next stage of the Wuskwatim planning process.) In addition, the position of NCN as potential partner provides an opportunity for the community to shape the Project, to some degree, to meet their own goals.

The continuing involvement of NCN in planning processes relevant to the Project means that there would be ongoing opportunities to discuss anticipated effects on personal, family and community life with residents of the Local Region and to refine impact management measures (to enhance benefits and mitigate adverse effects) through the course of 2003. One of these processes is development of a legally binding PDA between Manitoba Hydro and NCN. As for the earlier Agreement-in-Principle (finalized in 2001), NCN intends to discuss the PDA at length with members and to put the document to a secret ballot vote of NCN members before NCN Chief and Council approve it. This would provide additional opportunities for NCN members in the Local Region to discuss the Project in light of future goals and plans.

If the Project proceeds, the framework for current community planning is a likely vehicle through which NCN community effects of the Project would be managed. Impact management measures (mitigation and enhancement measures) associated with effects on people in the Local Region (particularly residents at Nelson House), for both construction

and operations phases, would be integrated with NCN's current community planning for the future. For example, planning and implementation of training programs relevant to the Project are already underway (since 2002). [Table 5.6](#) provides a summary of impact management categories pertinent to all socio-economic effects (economy, infrastructure and community services and personal, family and community life) that would be integrated with NCN's own community planning for its members. The table is organized according to community planning themes developed by NCN. NCN is using this planning framework (and associated details about scheduling, participants and detailed measures in each category) to prepare for the Project, if it proceeds. Impact management plans, along with estimated residual effects of the proposed Project, will form part of the information considered by NCN members as they vote on the proposed PDA in 2003.

Impact management measures relevant to effects on NCN members resident at South Indian Lake and the Northern Affairs community of Nelson House (most are NCN members) are assumed to apply.

Construction Phase

Prior to and during the construction phase of the Project, planning for enhancing positive effects of construction opportunities and mitigating negative effects of the development would be required in all eight of NCN's community planning theme areas ([Table 5.6](#)). In addition, initial planning for revenue from NCN's ownership investment is likely to be undertaken.

Operations Phase

Potential community effects during the operations phase would require planning for impact management during the period just prior to the operations phase and during the operations phase. [Table 5.6](#) illustrates that some planning in all eight of NCN's theme areas would be required. Of particular note would be planning for use of the stream of revenue resulting from NCN's investment in the Project.

Table 5.6 Categories of Impact Management Measures to be Integrated with NCN's Community Planning

Community Planning Theme Area	Category of Impact Management	Project Phase	
		Construction	Operations
Economic Development	<ul style="list-style-type: none"> • Training planning • Employment planning • Supports to workers in training and employment • Supports to workers and families during peak years • Extending opportunities beyond peak years 	X X X X	X
Education	<ul style="list-style-type: none"> • Training planning • Population change planning 	X X	
Health and Wellness	<ul style="list-style-type: none"> • Supports to workers in training and employment • Supports to workers and families during peak years and after peak years • Population change planning • Water quality at Wuskwatim Lake • Travel safety in Wuskwatim Lake area • Mercury in fish at Wuskwatim Lake • Communication of physical/biophysical monitoring results 	X X X X X X	X X X X X
Physical Infrastructure	<ul style="list-style-type: none"> • Training planning • Population change planning 	X X	
Recreation	<ul style="list-style-type: none"> • Population change planning 	X	
Justice	<ul style="list-style-type: none"> • Population change planning 	X	
Land use and resource management planning; environmental monitoring and management	<ul style="list-style-type: none"> • Access management planning • Travel safety in Wuskwatim Lake area • Communication of physical/biophysical monitoring results • Mercury in fish at Wuskwatim Lake 	X X X	X X X
Cultural values and traditions	<ul style="list-style-type: none"> • Planning for appropriate ceremonies prior to construction • Planning culturally-sensitive approach to construction activity • Contingency planning for special areas • Access management planning 	X X X	X X
All areas	<ul style="list-style-type: none"> • Planning for revenue from ownership investment 	X	X

Source: Based on NCN Community Planning Process theme areas.

5.2.4 Cumulative Effects

Effects of the Project on personal, family and community life of residents of the Local Region at Nelson House are expected to combine with effects of the Wuskwatim Transmission Project (beginning 2004/2005), the Gull/Keeyask Generating Station Project (beginning possibly in 2007), potentially the Conawapa Generating Station Project (if construction begins before the end of the construction phase for the Project) and activities that may occur as part of Tolko's Ten Year Forest Management Plan (2009 to 2014 period).⁴⁸ Effects of the Notigi Generating Station Project are not expected to combine with personal, family and community life effects in the Local Region mainly because economic effects of the Project are not expected to overlap with the construction phase of the Notigi Project.

In general, the Wuskwatim Transmission Project would overlap in space and time with effects of the Project, adding limited additional access south of the Burntwood River to new access provided by the road and, possibly the dam across the river. It would also add minimally to employment in the Local Region. The Gull/Keeyask and Conawapa Generation Projects would not overlap in space, but construction of these projects would overlap in time, potentially extending effects for local workers who pursue further employment opportunities as the Project construction phase is nearing completion. If Tolko winter road-building and harvesting activities are pursued south of the Burntwood River, this would overlap in space and time with new access associated with the Project. However, the likelihood of the Tolko activity in this time period is not certain.

Estimated cumulative effects on personal, family and community life of residents living at Nelson House in the Local Region are as follows:

1. Transportation Safety

- During the Project construction phase, a small construction workforce for the Wuskwatim Transmission Project would also be active in the area. In particular, the transmission line segment between the new Birchtree Station and the Wuskwatim construction site would be "pre-built" during 2004/2005 in order to supply construction power to the generating station work site. The segment of the transmission line between the new Wuskwatim Station and Herblet Station at Snow Lake would subsequently be constructed within the Local Region. While

⁴⁸ Section 2.2.7 provides full details on the approach and methodology for assessing cumulative effects and the future projects and activities included as part of the cumulative effects assessment for this SEIA.

this construction activity would overlap with Project construction activity, the amount of additional road traffic created is expected to be very small. The small construction workforce would be in the vicinity of currently dangerous travel areas at Wuskwatim Lake and downstream on the Burntwood River during winter months. While it would be prudent to warn workers of these travel dangers (pertaining to their leisure hours), it is likely that they will already be aware of these hazards through the course of constructing the transmission lines in this area. Once in operation, the cleared transmission line rights-of-way are expected to provide some additional access for NCN resource harvesters traveling to their traplines south of the Burntwood River (subject to provisions of an access management plan to be developed with NCN for transmission lines in the RMA).

- Gull/Keeyask and Conawapa Generation Projects would have no effect on water-based transportation safety in the Local Region. Workers would be housed at construction camps adjacent to these project sites, far from the Local Region. A small overlap in road-based traffic could occur on PR 391 at the eastern edge of the Local Region, where road traffic would turn north on PR 280 toward Split Lake and Gillam. However, this would be at a time when construction-phase traffic for the Project would be reduced compared to the peak construction years.
- Tolko's future plans for the period 2009 to 2014 include development of a winter road and harvest areas south of the Burntwood River from PTH 6 to the area south of Wuskwatim Lake. This new access could combine with new access to the area south of the Burntwood River via the Wuskwatim access road and generation facility across the Burntwood River, as well as the Wuskwatim transmission line (although the degree of access would vary according to specific terrain conditions). Development of such a road in this time frame is not certain, however, because the mature timber in the Partridge Crop Hill area is currently designated as an Area of Special Interest and may be protected in the future; also, Tolko could look, instead, to make use of the Wuskwatim access road rather than developing a new winter road. If developed, a Tolko winter road south of the Burntwood River would be unlikely to pose additional travel safety concerns, but would elevate concerns about management of access to these areas (e.g., problems encountered in the past, such as vandalism to cabins/traplines and over-harvesting of wildlife).

2. Aesthetics

- Aesthetic effects of the Project will be restricted to a local area between PR 391 and the Wuskwatim site, between Early Morning Rapids and Opegano Lake and in the immediate vicinity of the construction site (some of which will be rehabilitated after construction is complete). Only the Wuskwatim Transmission Project will create aesthetic changes that overlap with these effects. The Wuskwatim Transmission Project will create a linear right-of-way permanently cleared of trees (although some undergrowth may return after construction) between Birchtree Station and the Wuskwatim Station (58 metre width cleared and about 45 kilometres in length; guyed steel-lattice towers about 38 metres in height strung with three conductors). In the area between the Wuskwatim Station and the Herblet Lake Station at Snow Lake (the majority of the 138 kilometre length falls within the Local Region), two parallel transmission lines will be placed on a single right-of-way, of which about 108 metres will be cleared of trees. About twelve squares kilometers (five square miles) of land in total would be cleared within the Local Region.

3. Community Health

- The Wuskwatim Transmission Project would have no direct effect on the health of local residents during either construction or operations phases. Indirectly, the Project could affect determinants of health by marginally adding to employment income during the construction of the transmission line, Birchtree Station and Wuskwatim Station. However, the Project would have no added effect on in-migration and would not add to local resident concern about water-related physical and biophysical changes from the Project.
- Indirectly, the Gull/Keeyask Generation Project could affect determinants of health by extending income and employment effects of the construction phase of the Project, during a period when Wuskwatim construction phase employment would be declining. This would fit with NCN's intent of seeking out other opportunities to sustain and extend employment and business opportunities for the community.
- Similarly, if construction of the Conawapa Generation Project begins before 2009, this would serve to extend income and employment effects for local workers. The Gull/Keeyask and Conawapa projects could also extend population in-migration effects at Nelson House, to some degree.

4. Social Well-being

- Indirectly, the Wuskwatim Transmission Project could affect social well-being by marginally adding to employment income during the construction of the transmission line, Birchtree Station and Wuskwatim Station. However, the Project would have no added effect on in-migration.
- The Gull/Keeyask and Conawapa Generation Projects could affect social well-being by extending construction income and employment effects of the Project, during a period when Wuskwatim construction employment would be declining. This would fit with NCN's intent of seeking out other opportunities to sustain and extend employment and business opportunities for the community. The Gull/Keeyask and Conawapa Generation Projects could also extend population in-migration effects at Nelson House, to some degree, since some residents are likely to stay in Nelson House with the prospect of future work on other projects in the north.

5. Culture

- The Wuskwatim Transmission Project, by virtue of developing a new transmission line right-of-way south of the Burntwood River, could add to new access for local residents to reach their traplines south of the Burntwood River (the new access road and dam would allow access to the south side of the Burntwood River once construction is complete). This could marginally enhance the opportunity to undertake cultural practices in this area.
- For those workers from the Local Region who participate in construction of the Gull/Keeyask and Conawapa Generation Projects, workers would continue to be exposed to other languages while at those construction projects (as would be the case for local workers during Years 3 to 6 of the Wuskwatim construction project). No physical effects of the Gull/Keeyask or Conawapa projects are expected in the Local Region; therefore, effects would not overlap with physical effects on culture in the Local Region.
- If new winter road access is developed by Tolko south of the Burntwood River, then concern about protection of important ceremonial sites in the Wuskwatim Lake area would increase. However, the likelihood of such a development in the 2009 to 2014 time period is not certain.

6. Community Organization and Governance

- NCN staff would continue to be involved in planning for the portion of the Wuskwatim Transmission Project that will be developed within the Local Region (e.g., detailed routing, participation in monitoring).
- The Gull/Keeyask and Conawapa Generation Projects are unlikely to require the involvement of NCN.
- Future Tolko activities in the Local Region in the 2009 to 2014 period are likely to be discussed with NCN to some degree, but the level of involvement is not known.
- Response to other projects would not be onerous for the NCN organization.

7. Goals and Plans

- NCN would assess any effects of other projects (positive or negative) against their vision, goals and plans in the near term (for the Wuskwatim Transmission Project) and in the medium and longer term for other projects.

5.2.5 Residual Effects and Significance

This section presents the estimated residual effects of the Project on personal, family and community life of residents in the Local Region (Table 5.7). Residual effects incorporate, to the extent possible, cumulative effects noted in Section 5.2.4 and consider the effect of impact management measures (both mitigation and enhancement measures) that are planned. Based on criteria outlined in Section 2.2.8, the significance of these effects for the community as a whole is assessed, along with the general direction of change (positive, negative or elements of both). There are no significant adverse socio-economic effects predicted from the Project with respect to personal, family and community life. Significant positive effects from the Project on the Local Region are possible with respect to several components of personal, family and community life. It should be noted that the magnitude of positive effects that may result from the use by NCN of future revenue from their ownership investment is difficult to predict. As a community, NCN would set priorities for that revenue resource in the future.

Table 5.7. Residual Effects and Significance of Effects on Personal, Family and Community Life of the Local Region.

Topic and Project Phase	Residual Effect	Significance*
Transportation Safety		
Construction Phase	Limited exposure to existing water-based travel risks on Wuskwatim Lake and downstream on the Burntwood River	Minor (-) (not significant)
	Limited additional traffic and risk of accidents on PR 391	Minor (-) (not significant)
Operations Phase	Limited exposure to existing water-based travel risks on Wuskwatim Lake and downstream on the Burntwood River	Minor (-) (not significant)
	Improved safety in accessing Wuskwatim Lake area (and potentially across the Burntwood River)	Moderate (+) (significant)
Aesthetics		
Construction Phase	Negative change to aesthetic quality of construction site, access road and borrow areas	Minor (-) (not significant)
	Increased exposure of residents with limited improved access	Minor (-) (not significant)
Operations Phase	Continued negative aesthetic quality of immediate generating station area, but rehabilitation of work and borrow areas	Minor (-) (not significant)
Community Health		
Construction Phase	As today, continued need for boiling surface water at Wuskwatim Lake; communication of same to newcomers	Negligible (-) (not significant)
	Indirect effect of income, employment and training on standard of living of workers and families; if measures to support workers and families successful, positive contribution to health; cumulative effects could extend opportunities	Minor (+) (not significant)
	Indirect effect of crowded housing conditions; mitigation measures to address issue	Minor (-) (not significant)
	Indirect effect on concern for environmental change, reduced for some through full and frequent reporting of physical/biophysical monitoring results and health monitoring results	Minor (-) (not significant)

Table 5.7. Residual Effects and Significance of Effects on Personal, Family and Community Life of the Local Region Cont'd

Topic and Project Phase	Residual Effect	Significance*
Community Health Cont'd		
Operations Phase	As today, continued need for boiling surface water at Wuskwatim Lake; communication of same to newcomers	Negligible (-) (not significant)
	Limited effect on health of increased mercury in Wuskwatim Lake; if monitoring warrants, mitigation of recommended reduction in domestic use of fish	Negligible (-) (not significant)
	Indirect effect on concern for environmental change, reduced for some through full and frequent reporting of physical/biophysical monitoring results and health monitoring results	Minor (-) (not significant)
	Potential for indirect contribution to factors affecting health (e.g., new housing, economic development) from revenue from ownership investment	Moderate – Major (+) (significant)
Social Well-being		
Construction Phase	Indirect effect of income, employment and training on standard of living of workers and families; if measures to support workers and families successful, positive contribution to social well-being	Minor (+) (not significant)
	Reuniting family and friends, but possible effect of crowded housing conditions, to some extent; mitigation measures in place	Minor (- and +) (not significant)
	Opportunity to reconnect with Wuskwatim Lake area for cultural practices through improved access	Minor (+) (not significant)
Operations Phase	If opportunities sustained, then positive contribution to social well-being	Minor to Moderate (+) (not significant)
	Opportunity for members to reconnect with culturally-important area through better access	Minor (+) (not significant)
	Potential for indirect contribution to factors affecting social well-being (e.g., new housing, economic development) from revenue from ownership investment	Moderate – Major (+) (significant)

Table 5.7. Residual Effects and Significance of Effects on Personal, Family and Community Life of the Local Region Cont'd

Topic and Project Phase	Residual Effect	Significance*
Culture		
Construction Phase	Reduced opportunities to speak Nehethow-we-win (Cree) during years 3 to 6; extended with work on other projects	Minor (-) (not significant)
	NCN interest in continuing to collect and preserve TK	Minor (+) (not significant)
	Loss of Taskinigup and Wuskwatim Falls for cultural practices, but new access to important ceremonial sites, once again, to undertake cultural practices	Minor (- and +) (not significant)
	As noted under health, positive and negative health and wellness effects	see health
Operations Phase	Loss of TK re: falls, but opportunity to observe and be part of Wuskwatim Lake area and area south of Burntwood River through improved access. Risks associated with visits by others dealt with through Access Management Plan	Minor (- and +) (not significant)
	With contingency planning, reduced concerns about effects on important ceremonial sites	Minor (-) (not significant)
	Concern about environmental changes reduced for some through full and frequent reporting of physical/biophysical monitoring	Minor (-) (not significant)
	Potential for indirect contribution to factors affecting culture (e.g., investment in culture programming) from revenue from ownership investment	Moderate – Major (+) (significant)
Community Organization and Governance		
Construction Phase	Continued participation in joint planning process in 2003; stretching key staff and development of new staff	Minor (+ and -) (not significant)
	Development of new organization to participate in Limited Partnership	Minor (+) (not significant)
	Participation by NCN service providers in community-based impact management, beginning in 2003	Minor (+) (not significant)
Operations Phase – Local Region	New community mechanism to deal with decision-making for stream of revenue	Minor (+) (not significant)

Table 5.7. Residual Effects and Significance of Effects on Personal, Family and Community Life of the Local Region Cont'd

Topic and Project Phase	Residual Effect	Significance*
Goals and Plans		
Construction Phase – Local Region	Process of discussion and vote on PDA affords opportunity for NCN membership to test Project against community vision and goals	Moderate (+) (significant)
Operations Phase – Local Region	Potential for indirect contribution to factors affecting quality of life for NCN members (e.g., new housing, economic development) from revenue from ownership investment	Moderate – Major (+) (significant)

The Project is expected to have both positive and negative effects on people in the Local Region (NCN, including members living at Nelson House and the Nelson House Northern Affairs community). The Project would have the most pronounced effect on these people by virtue of their proximity to the Project, their ongoing traditional use of the area around Wuskwatim Lake, and their participation in the Project as a potential partner (including employment and business activities). At South Indian Lake, also discussed in the Local Region, effects are expected to be limited to employment and business opportunities.

Personal, family and community life can be affected by the accumulated effects of physical, biophysical, economic (including return on ownership investment in the generating station) and population changes. The experience of these changes would vary for individuals, for families and for the community as a whole, depending upon their experience of the effects of the Project. For example, residents who harvest resources in the Wuskwatim Lake area would experience the Project differently than residents who take up construction jobs at the construction site.

In addition to their own experience of positive and negative changes, effects on community life would be interpreted by residents of the Local Region according to their own outlook on their current circumstances and on the future circumstances for themselves, their families and their community (i.e., how those changes fit with their world today and their goals and aspirations for improving their world tomorrow).

NCN is in a special position of full involvement with Manitoba Hydro in planning for the Project. This means that residents of the Local Region, through NCN's Future Development Team and through community involvement processes, have participated in

planning many aspects of the proposed development that can affect personal, family and community life. The continuing involvement of NCN in planning processes relevant to the Project means that there would be ongoing opportunities, particularly through 2003, to discuss anticipated effects on personal, family and community life with residents of the Local Region and to refine impact management measures (to enhance benefits and mitigate adverse effects). If the Project proceeds, it is anticipated that management of effects of the Project to the best advantage of residents of the Local Region will be integrated, during 2003 and beyond, with NCN's own planning for the future.

Policy and other matters that affect personal, family and community life, which will not be finalized by the time of filing of the Environmental Impact Statement, introduce uncertainties to conclusions about residual effects.

Construction Phase

Prior to and during the construction phase, the Project is expected to have negligible to minor negative effects and minor to moderate positive effects on personal, family and community life in the Local Region. These conclusions consider the effects of impact management measures (to enhance positive effects and mitigate negative effects) discussed in the previous section. In summary, these residual effects are:

- Limited project-related traffic is expected to have a minor negative effect on road traffic on PR 391, even during the busiest year and season of construction.
- In general, the new access road between PR 391 and the Wuskwatim site will improve the safety of travel to the Wuskwatim Lake area, previously difficult and dangerous for local residents to reach via the Burntwood River system. However, access will be limited for non-construction traffic during the construction phase.
- Current travel risks on Wuskwatim Lake and areas upstream and downstream of the construction site will not change during construction. Safety risks will be communicated to non-local workers and others unfamiliar with the area and, with safety measures in place, negative effects are considered to be minor.
- Negative aesthetic changes to Wuskwatim Falls, Taskinigup Falls, work areas, borrow areas and the access road are likely to be of concern to some residents of the Local Region, but are not expected to be of sufficient magnitude to be considered significant overall.
- Any direct effect on water quality at Wuskwatim Lake is expected to have no effect on the health of those who may use surface water while camped at the lake. Indirect

effects on “determinants” of health (factors that affect health, such as employment and income) cannot be estimated with any certainty, but may include both minor negative and positive effects. Minor to moderate positive effects on social well-being may result from economic effects of construction employment, if measures to support workers and their families are successful. Returning population may be a minor source of both positive and negative effects on social well-being assuming that measures to mitigate effects are in place.

- Cultural effects include minor negative effects on language for local workers living in the construction camp, minor positive effects on traditional knowledge, if NCN continues to collect and preserve TK, and minor positive and negative effects on cultural practices as a result of new access and physical works respectively.
- Prior to and during construction, NCN organizations will be involved in planning for and managing effects of the Project, creating minor positive and negative effects on community organization and governance.
- NCN will consider the degree to which the Project fits with the vision and goals of the community prior to proceeding. The community’s framework of community planning may be a vehicle through which effects of the Project on people are managed.

Each of these effects is presented in the remainder of this section.

Transportation, Safety and Access

During construction, PR 391 is capable of safely accommodating all project-related traffic. Traffic volumes, which peak at 1,100 vehicles/day during Years three to five, are well within the 6,000 vehicles/day that can be accommodated on this highway. Construction traffic will have only a minimal effect on accident rates along PR 391 (projected increase of only one additional accident per year between the Split Lake Junction at PR 390 and the access road during 2007, the busiest year of construction). Negative effects are considered to be of minor significance, given their limited nature.

The access road between PR 391 and the Wuskwatim site would improve entry to the Wuskwatim Lake area, which currently is difficult to reach. Access will be limited during the construction phase (via a staffed gate at PR 391 operated 24 hours per day and 7 days per week), according to the Access Management Plan, to those associated with Project

construction and to others deemed by the Limited Partnership to be permitted to use the access road (e.g., resource harvesters).

During the construction phase, travel conditions on Wuskwatim Lake are expected to remain unchanged during summer (existing debris issues would remain) and in winter (current areas of limited or no ice cover would remain). Current travel risks on Wuskwatim Lake and areas upstream and downstream of the construction site would be communicated to workers unfamiliar with the area and water-based travel would be discouraged. During construction, access by individuals other than construction-related staff would be decided by the Limited Partnership (e.g., resource harvesters with traplines along the access road and south of the Burntwood River). To the extent that any of these individuals may be unfamiliar with current travel hazards (e.g., NCN members who have not visited the area in some time), this would be dealt with if and as required through safety measures to be discussed between NCN and Manitoba Hydro. With appropriate safety measures in place, negative effects are considered to be minor.

Aesthetics

For residents of the Local Region who currently use the Wuskwatim Lake area, as well as others in the Region who have an attachment to the Wuskwatim Lake area, there will be obvious negative changes in the aesthetic quality of the area with the addition of the physical structures (including loss of the Wuskwatim and Taskinigup Falls), work area, borrow areas and access road. While this effect would be of concern for many residents of the Local Region, it is unlikely to be of sufficient magnitude to cause a discernible change to community life (e.g., it has not been expressed during public involvement activities by residents as a reason not to pursue the Project). Therefore, it is considered to be of minor significance, overall.

Community Health

Although not a recommended practice, NCN resource harvesters typically draw and consume surface water from Wuskwatim Lake while camped there (and some also bring bottled water from home). Water quality is not expected to change in the majority of Wuskwatim Lake and water quality in the vicinity of in-river construction activity (turbidity only) and in the vicinity of the construction camp waste treatment outfall will be reduced. Those who use the area will already be restricted from these areas for safety reasons, therefore there should be no effect on human health.

Indirect effects of Project construction have the potential to affect some “determinants” of health (factors affecting health). However, due to the broad range of confounding variables, it is difficult to comment with certainty on the magnitude and significance of these indirect changes on health of residents of the Local Region. In addition, some effects are positive and others negative. Construction phase income, employment and training may help to improve the standard of living of construction workers and their families at Nelson House (on and off reserve) and at South Indian Lake, at least for the period of construction employment. If measures to support workers and their families are successful, these opportunities will be maximized; if not, then benefits will be limited. If measures by NCN are successful in extending economic opportunities beyond the Project, then the “boom and bust” effect of these opportunities will be lessened. Depending upon the success of these measures, economic effects may have a minor positive effect on health. Returning population to Nelson House may worsen already crowded housing conditions, a key determinant of health, and strain health services. With mitigation, this effect is considered to have a minor negative effect on health. Finally, worry among residents about the extent of environmental change from the Project should be diminished for some people through full reporting of environmental monitoring and health status monitoring to residents on a regular basis. With mitigation, this is considered to be a minor negative effect.

Social Well-being

During the construction phase, social well-being of residents of Nelson House may be affected in both positive and negative ways. New training, employment and business opportunities have the potential to generate new household income and self-esteem for workers. If substantial efforts by NCN and Manitoba Hydro to assist workers and their families are successful, then there would be a minor to moderate positive effect on social well-being. Returning population (numbers uncertain) would be positive for social well-being in terms of reuniting family and friends, but could add to social stress if crowded housing conditions persist for a substantial length of time. With mitigation, returning population may have minor positive and negative effects on social well-being. Finally, beginning during the construction phase, limited new access to the Wuskwatim Lake area (the degree of access will be constrained during the construction phase) would allow some residents to begin to reconnect with important cultural features. This may have a minor positive effect on social well-being.

Culture

The construction phase of the Project has the potential to affect four indicators of culture in the Local Region that are considered to be vulnerable at the present time. Limited effect on language is anticipated as a result of local residents working and living at the construction site; reduced opportunities to speak Nehethow-we-win would occur mainly during seasonal periods during Years 3 to 6. This is considered to be a minor negative effect on language, overall. NCN has expressed an interest in continuing the work begun during the environmental assessment studies of collecting and preserving traditional knowledge. This may have a minor positive effect on traditional knowledge. Although few people have been able to visit the Wuskwatim and Taskinigup Falls area (until recent site ceremonies in 2000 and 2001), beginning during the construction phase, physical changes to the Wuskwatim Falls and Taskinigup Falls area could affect the opportunity to undertake cultural practices associated with that area. At the same time, limited new access to the area via the new access road could provide the opportunity for residents, once again, to undertake cultural practices associated with important ceremonial sites in the Wuskwatim Lake area. Therefore, minor positive and negative effects on cultural practices are expected. Health and wellness may be affected in positive and negative ways by the construction phase, as noted above.

Community Organization and Governance

Prior to and during the construction phase, community organization and governance would continue to be affected by NCN's participation in joint planning for the Project, along with Manitoba Hydro and others. Particularly in 2003, available time of senior staff involved in the Future Development Team would continue to be taxed. The Future Development Team would continue to be part of the organization. If the Project proceeds, NCN would put in place a new organization for their participation in the Limited Partnership. Beginning during 2003, NCN service providers, potentially participating in impact management if the Project proceeds, would be engaged in internal planning to prepare for community change. Once underway, NCN government and service providers would implement coordination and communication mechanisms to respond to community changes. Minor positive and negative effects on community organization and governance are expected.

NCN Goals and Plans

NCN goals and plans will play a role in shaping the future of the Local Region, particularly for members resident at the community of Nelson House. NCN's vision, goals and plans will provide a context against which members are likely to compare the benefits and drawbacks of the proposed Project for themselves, their families and the community as a whole. NCN is well-positioned to consider the question of compatibility of proposed Project effects with the Cree Nation's future vision, goals and plans for the future. Since 1997, NCN has been engaged with Manitoba Hydro in joint planning activities, including development of an Agreement-in-Principle (AIP) and eventually a Project Development Agreement (PDA). Ultimately, referenda at both the AIP stage and the PDA stage will provide a clear indication of whether the Project is consistent enough with the goals and plans of NCN that it should proceed, from the perspective of residents of the Local Region. (The AIP was ratified in 2001, indicating that members wanted to continue to the next stage of the Wuskwatim planning process.) In addition, the position of NCN as potential partner provides an opportunity for the community to shape the Project, to some degree, to meet their own goals.

If the Project proceeds, the framework of current community planning is a likely vehicle through which NCN community effects of the Project would be managed. Impact management measures (mitigation and enhancement measures) associated with effects on people in the Local Region (particularly residents at Nelson House), for both construction and operations phases, would be integrated with NCN's current community planning for the future. Impact management plans, along with estimated residual effects of the proposed Project, will form part of the information considered by NCN members as they vote on the proposed PDA in 2003.

Prior to and during the construction phase of the Project, planning for and enhancing positive effects of construction opportunities and mitigating negative effects of the development would be required in all eight of NCN's community planning theme areas. In addition, initial planning for revenue from NCN's ownership investment would be undertaken.

Operations Phase

During the operations phase, the Project is expected to have minor negative effects and minor to major positive effects on personal, family and community life in the Local Region. These conclusions consider the effects of impact management measures (to

enhance positive effects and mitigate negative effects) discussed in the previous section. In summary, these residual effects are:

- No effects on safety due to Project-related traffic are expected.
- Access to the Wuskwatim Lake area will be improved via the access road. Use of the road will be managed by an Access Management Plan.
- Risks of travel on Wuskwatim Lake are not expected to change, either during open water or winter conditions. With appropriate safety measures in place to warn and protect visitors to the area, negative effects on safety are expected to be minor.
- If biophysical monitoring results warrant, domestic consumption of walleye and pike from Wuskwatim Lake should be reduced. With appropriate information, minor negative effects on community health are anticipated.
- Indirect effects on “determinants” of health (factors that affect health, such as employment and income) cannot be estimated with any certainty, but may include both minor negative effects and moderate to major positive effects.
- Minor to moderate positive effects on social well-being may occur if employment and income effects of the Project can be sustained through other economic activity, including the cumulative effects of the potential Gull/Keeyask and Conawapa projects. A minor positive effect may result from the reconnection to ceremonial sites in the Wuskwatim Lake area. Although difficult to predict, long-term revenue from NCN’s investment in the Project could have a moderate to major positive effect on social well-being with investment of funds in community priorities.
- Cultural effects include minor positive and negative effects on Traditional Knowledge, minor positive effect on cultural practices and a minor negative effect on health and wellness. If strengthening culture is a future community priority, new long-term revenue could have a moderate to major positive effect.
- NCN’s community organization and governance would continue to manage both positive and adverse effects of the Project. In the long term, NCN will need to plan for use of the new stream of revenue from NCN’s investment in the Project.

Each of these effects is presented in the remainder of this section.

Transportation, Safety and Access

No effects on traffic safety are anticipated once the construction phase is complete. A very small workforce of six will operate the station, creating negligible traffic.

The access road would improve the safety of travel to the Wuskwatim Lake area, which currently is difficult to reach. If access across the completed dam is permitted, safety of travel to the south side of the Burntwood River would be improved. In both cases, a moderately positive effect is anticipated for residents of the Local Region. The management of access on the access road will be governed by an Access Management Plan; the post-construction portion of the Plan will be developed by Manitoba Hydro and NCN (via the Limited Partnership) before the operations phase begins. Whether access across the dam will be permitted will also be decided prior to the operations phase.

Travel conditions on Wuskwatim Lake are expected to remain unchanged during summer (limited additional debris is expected, but existing debris issues would remain) and in winter (except for small area of open water upstream of the generating station, once in operation; current areas of limited or no ice cover would remain). However, current travel risks on Wuskwatim Lake and areas upstream and downstream would need to be communicated to those unfamiliar with the area. Safety measures, if and as appropriate, would be put in place. With appropriate safety measures in place, negative effects are considered to be minor.

Community Health

Water quality is not expected to change in the majority of Wuskwatim Lake and water quality in nearshore areas would be changed only in terms of turbidity, particularly after stormy weather. For those who draw and consume surface water from Wuskwatim Lake while camped there, no change in the practices of boiling lake water before use or bringing bottled water from other locations is warranted. Sharing of water quality monitoring results and continued water use practices with resource harvesters and others who may use the area is expected. With these measures, there should be negligible effects on human health.

While there has been limited domestic use of fish from Wuskwatim Lake in recent years because the area was difficult to access, new access by Local Region residents and others could mean that fish could be harvested and used in local diets. Analysis (based on calculations of meals per week for a 70 kilogram male) indicates that reductions in

consumption of walleye (2.2 meals per week) and pike (1.6 meals per week) would be prudent, particularly in women of child-bearing years (15 to 39 years) who should be restricted to half this amount. By comparison, these restrictions are slightly less than calculated for Footprint Lake (1.1 meals per week for walleye and 1.3 meals per week for pike) and slightly more than calculated for Leftrook Lake (3.1 meals per week for walleye and 3.3 meals per week for pike). Both lakes are currently used for domestic harvest. Whitefish consumption should be unaffected, with calculated restrictions of 6.5 meals per week at Wuskwatim Lake. Any actual recommendations to local residents regarding reduced use of walleye and pike in the future should be based on actual monitoring results.

Indirect effects of Project operation have the potential to affect some determinants of health. However, due to the broad range of confounding variables, it is difficult to comment with certainty on the magnitude of these indirect changes to the health of residents of the Local Region. In addition, some effects are positive and others negative. Worry among residents about the extent of environmental change because of the Project should be diminished for some through full reporting of environmental monitoring and health status monitoring on a regular basis. With mitigation, this effect is considered to be a minor negative effect. In the long term, revenue to NCN from investment in the Project could potentially contribute to improving determinants of health (e.g., new housing, economic development). Although difficult to predict, this effect could be a moderate to major positive effect for NCN, when substantial new funding is available to address community priorities.

Social Well-being

During the operations phase, social well-being of residents of Nelson House may be affected in both positive and negative ways. If efforts by NCN to sustain and extend economic opportunities for workers who have gained a base of training and experience during the construction phase are successful, then a positive contribution to social well-being will continue for these workers and their families. Cumulative effects of the potential Gull/Keeyask and Conawapa Generation Projects would contribute to sustained opportunities. From a minor to moderate positive effect on social well-being may occur. New access to the Wuskwatim Lake area would allow residents to reconnect with important cultural features; a minor positive effect is expected. In the long term, new revenue available to NCN, as a result of their possible ownership participation in the Project, would be available to address community priorities, including the goal of

improving social well-being. Although difficult to predict, this effect could create a moderate to major positive effect for NCN.

Culture

The operations phase of the Project has the potential to affect three indicators of culture in the Local Region that are considered to be vulnerable at the present time. Traditional Knowledge gained through long-term observation of the landscape in the vicinity of Wuskwatim Lake would be affected by one-half square kilometre of flooding at Wuskwatim Falls and Taskinigup Falls. With monitoring and contingency plans in place, Elders' concerns about protection of the important ceremonial sites at Wuskwatim Lake should be reduced. Renewed access to the area, including possible access to the south side of the Burntwood River over the dam, would allow for continued observation of the land that has been interrupted by CRD-related travel difficulties. Therefore, minor positive and negative effects concerning Traditional Knowledge are expected. New access to ceremonial sites could bring new opportunities for cultural practices by NCN members (a minor positive effect). Risks to the sites through visits by others would be coordinated through the Access Management Plan. Worry among residents about the extent of environmental change because of the Project should be diminished for some through full reporting of environmental monitoring and health status monitoring on a regular basis. With mitigation, this is expected to be a minor negative effect. Finally, in the long term, if revenue available through NCN's potential investment in the Project is used for cultural programming, then the vulnerable indicators (including language) could be strengthened. Although difficult to predict, this effect could be a moderate to major positive effect for NCN, when substantial new funding is available to address community priorities.

Community Organization and Governance

During the operations phase, community organization and governance for NCN would be affected by the need to deal with the stream of income arising from NCN's investment in the Project.

NCN Goals and Plans

Potential community effects during the operations phase would require planning for impact management by NCN during the period just prior to the operations phase and during the operations phase. Planning in all eight of NCN's theme areas would be

required. Of particular note would be planning for use of the stream of revenue resulting from NCN's investment in the Project.

5.2.6 Monitoring and Follow-up

Monitoring will be undertaken in order to provide, in a timely way, information that will be used by NCN and/or Manitoba Hydro (and potentially other relevant parties) to manage effects of the Project. Specific work plans for monitoring and following-up of topics in personal, family and community life will be developed between the NCN and Manitoba Hydro. Monitoring for health, social well-being and culture is intended to be coordinated with efforts in the Local Region to make the most of Project benefits, i.e., purchasing, employment and training for residents of the Local Region (Section 3.2), and to deal with population change and its associated effects (Section 4.2); this is important because these factors are likely to influence personal, family community life. Collectively, monitoring of economic change, population change and change in personal, family and community life topics, are intended to inform NCN's community planning response to the Project. No specific monitoring or follow-up is required for aesthetics, community organization and governance and goals and plans.

Construction Phase

- **Road traffic**: Tracking of road accidents and Project-related incidents on the new access road (between PR 391 and the construction site), on PR 391 west of Thompson, within the City of Thompson and on PTH 6 south of Thompson. Monitoring results will be used by Manitoba Hydro and NCN, in conjunction with other relevant parties (e.g., Manitoba Department of Highways and Government Services) to highlight any issues and take action as necessary.
- **Water-based navigation**: Monitoring of the effectiveness of any safety measures put in place by NCN and Manitoba Hydro will be undertaken.
- **Community health, social well-being and culture**: During the construction phase, monitoring of community health, social well-being and culture will be undertaken at Nelson House. This will be coordinated with physical, biophysical and resource use monitoring. Results will be used to inform NCN (including key service providers), Manitoba Hydro and community residents, and as input to management of effects.
- **Unanticipated effects**: To track any unanticipated effects, an annual workshop (coordinated with the biophysical monitoring program) would be held with resource

users, Elders, leaders, youth, men, women and commercial enterprises to discuss changes associated with the Project.

Operations Phase

- Road traffic: No traffic monitoring on PR 391 is necessary. Monitoring of the effectiveness of the Access Management Plan (see [Volume 3](#), Project Description) is assumed.
- Water-based navigation: Monitoring any mechanisms implemented by Manitoba Hydro and NCN to address navigation on Wuskwatim Lake and the area immediately downstream of the dam would be undertaken.
- Community health, social well-being and culture: During the operations phase, for a period to be determined (e.g., five to ten years) continued monitoring of community health, social well-being and culture will be undertaken. Monitoring of water levels on Wuskwatim Lake will occur, as needed, in relation to important ceremonial sites and follow-up contingency action. Monitoring will be coordinated with physical, biophysical and resource use monitoring. Results will be used to inform NCN (including key service providers), Manitoba Hydro and community residents and as input to management of effects.
- Unanticipated effects: To track any unanticipated effects, an annual workshop (coordinated with the biophysical monitoring program) would be held with resource users, Elders, leaders, youth, men, women and commercial enterprises to discuss changes associated with the Project.

5.3 PROJECT REGION

In the Project Region (beyond the Local Region), effects on personal, family and community life are expected primarily in the City of Thompson, the next closest community to the Project site. Main effects on personal, family and community life in the City of Thompson are presented in this section. In other communities in the Project Region (as well as in the Northern Region and beyond), effects on personal, family and community life are expected to be limited to some benefits associated with participation in construction-phase employment and business opportunities distributed across a broad range of communities and are not reviewed further. Through public involvement activities ([Volume 2](#)), concerns were expressed by some residents in Project Region communities (beyond Thompson), particularly with respect to biophysical effects of

changes in water levels and flows on the Burntwood River system as a result of the Project. Biophysical studies have concluded that effects are not expected to extend beyond the Local Region (noticeable effects are expected to be confined to the area between Early Morning Rapids and Birch Tree Lake) (see [Volume 5](#), Aquatic Environment). Nevertheless, monitoring of potential downstream effects beyond the Local Region is planned to address these concerns. Periodic communication of monitoring results to communities where such concerns were expressed is planned to mitigate such concerns and to provide a basis for prompt action in the event that unpredicted adverse effects do occur.

5.3.1 Sources of Effect

Personal, family and community life can be affected by indirect Project-related effects that flow mainly through physical, economic and population changes.

For the City of Thompson/LGD of Mystery Lake, key sources of change during the construction phase include:

- Visits to Thompson by construction workers resident at the construction camp
- Potential in-migration to Thompson, particularly early in the construction period, and associated new demand for housing and services
- Construction-related traffic
- Some new employment and business income.

For the City of Thompson/LGD of Mystery Lake, the primary source of change during the operations phase is expected to be potential new access to the Wuskwatim Lake area via the new access road and, possibly, to the south side of the Burntwood River (if access is permitted across the dam).

5.3.2 Existing Environment

In the Project Region, the City of Thompson is home to people who have moved to the City for economic reasons, in particular to participate in the mining-based resource economy that was the basis for establishing the community in the late 1950s. In general, the population of Thompson has grown and declined along with employment opportunities associated with the mining sector. Since Thompson's early days, a second generation of residents has been raised in the community. Over time, Thompson's role as a regional government and service centre for communities in central and northeast

Manitoba has grown. A segment of Thompson's population has migrated to the City from the south or other locations to participate in government or private sector employment. There are also segments of the population who have migrated to Thompson in order to access services – for example, educational services or specialized medical care such as dialysis treatment. In some cases, residents of outlying communities have moved to Thompson because of lack of opportunities for work in their home community (e.g., migration from Leaf Rapids in 2002) or lack of housing (e.g., NCN members unable to obtain on-reserve housing; some NCN members live in Thompson and commute daily to work in Nelson House). Aboriginal people made up about 28 per cent of Thompson's population in 1996 (Statistics Canada, 1996); some estimates place that proportion at 40 per cent or more (see Section 4.3.2.1). Thompson's regional-centre role (including as a road, rail and air transportation hub) also means that there are many visitors to the City from outlying communities and from the south. The Local Government District of Mystery Lake, which surrounds the City of Thompson, includes very limited population (five persons in 1996 according to Statistics Canada).

The following sections characterize relevant aspects of personal, family and community life in the City of Thompson, focusing on topics where change is anticipated to occur:

- Road traffic and safety (including PTH south of Thompson)
- Outdoor recreation
- Social well-being
- Goals and plans.

5.3.2.1 Transportation, Safety and Access

Within City of Thompson

The internal road system of Thompson, as seen in [Figure 4.9](#), was developed in a cloverleaf design on a central circle – Thompson Drive North and South. Thompson Drive is U-shaped and intersects Mystery Lake Road at both the north (Maclean Park) and south end (Heritage North Museum) to form a loop. Its route follows the natural contour of the Burntwood River, as the City of Thompson is situated in a bend of the River (Design North 2000).

Within the city, PR 391 becomes a four-lane divided street, known as Mystery Lake Road. Along Mystery Lake Road (from south to north) there are four signalized intersections at Burntwood Road, Thompson Drive South, Station Road and Thompson

Drive North. Accident statistics, obtained from MTGS, are shown for each of these intersections in Table 5.8 below (ND Lea 2002).

Table 5.8 Accidents within City of Thompson: 1995 to 2000

Intersection	Average # of Accidents per year	Accidents per Million Vehicles Entering Intersection
PR 391/Burntwood Road	1	0.36
PR 391/Thompson Drive S.	2	0.48
PR 391/Station Road	6	1.07
PR 391/Thompson Drive N.	3	0.57

Source: ND Lea Engineers & Planners Inc. 2002.

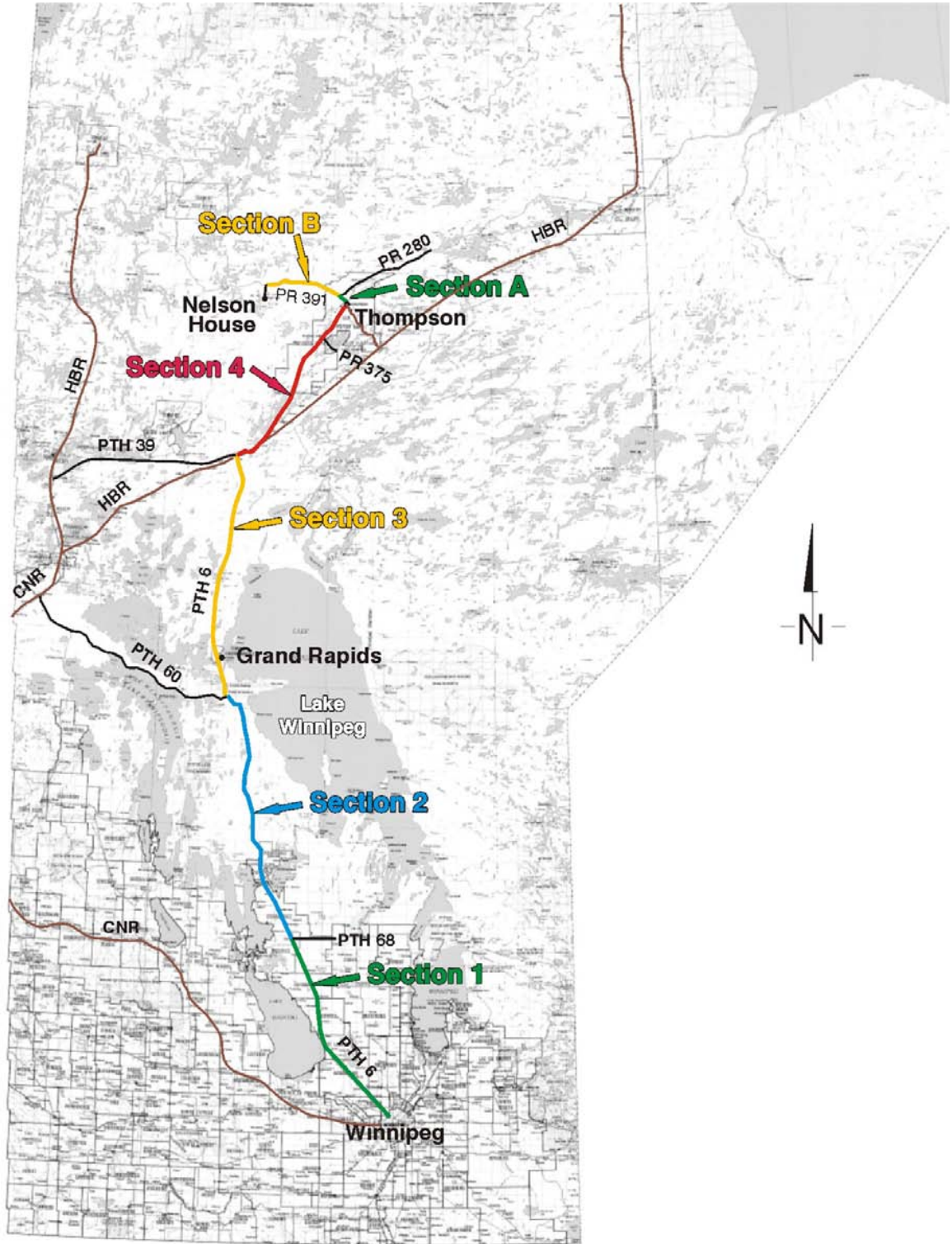
PTH 6 South of Thompson

Thompson is connected to Winnipeg by Provincial Trunk Highway (PTH) 6, an all-weather two-lane highway (Figure 5.10). The travelling distance between Thompson and Winnipeg along PTH 6 is 756 kilometres, or approximately eight hours driving time. PTH 6 meets PR 391 at the southern limit of Thompson.

For the purposes of this analysis, PTH 6 has been divided into four main sections (as shown in Figure 5.10 below):

- Section 1: Provincial Road (PR) 236 to PTH 68
- Section 2: PTH 68 to PTH 60
- Section 3: PTH 60 to PTH 39
- Section 4: PTH 39 to Thompson (ND Lea 2002).

Figure 5.10 Sections 1 through 4 of Provincial Trunk Highway 6



Source: ND Lea 2002.

Table 5.9 below displays highway traffic volumes and accident rates along PTH 6. As shown in this table, Section 1, between PR 236 and PTH 68, experiences considerably more traffic than other sections of PTH 6.

Table 5.9 PTH 6 Highway Traffic Volume and Accidents: 2000

Highway	Section	Average 2000 AADT ¹	AADTT ² (Truck %)	ASDT ³	# of Accidents (2000)	Accidents/ Million vehicle-km
PTH 6	1	2,290	220 (9.6%)	2,630	36	0.36
	2	1,035	140 (13.5%)	1,190	33	0.34
	3	410	90 (21.8%)	485	10	0.32
	4	1,025	100 (10.0%)	1,240	24	0.42

Source:

1 - ND Lea, 2002).

Notes:

- 1 - AADT: Annual Average Daily Traffic. This statistic provides an indication of the average usage of a road at a particular traffic station. The AADT estimates the typical daily traffic on a particular road segment for all days of the week (Sunday to Saturday) over a one-year period.
- 2 - AADTT: Average Annual Daily Truck Traffic (trucks/day).
- 3 - ASDT: Average Summer Daily Traffic. The ASDT represents an estimate of typical daily traffic on a road segment for all days of the week (Sunday to Saturday) over the summer season (in Manitoba the summer season spans May 1 to September 30).

5.3.2.2 Outdoor Recreation

Community Recreation

Recreation services for Thompson are primarily provided by the City of Thompson Recreation, Parks and Culture Department. Provincial agencies like the Department of Culture, Heritage and Citizenship, Health and Family Services and a number of volunteer and non-profit organizations also help to provide such services.

Recreation facilities operated by the City include the Thompson Recreation Complex, the Norplex Pool, the Thompson Public Library, the Heritage North Museum, fifteen baseball/fastball diamonds, two senior soccer fields, five junior soccer fields, five tennis courts, ten playgrounds, three outdoor rinks, two outdoor wading pools and 35 kilometres of cross-country ski trails. The City of Thompson’s Recreation, Parks and Culture Department provides support for programming in a variety of recreational areas. None of these programs is currently at capacity and all could handle additional participants.

Other recreational facilities available to Thompson residents but not operated by the City include: Thompson Golf Club, Mystery Mountain Winter Park, a twelve-lane 5-pin

bowling facility, the Burntwood Curling Club, Thompson Trailbreakers Inc., the Northern Ballet Academy, the Kelly Waterman School of Dance, and Better Body Fitness (Mystery Net Project 2001).

Outdoor Recreation in Thompson and Vicinity

The importance of outdoor recreation to Thompson residents is noted in the 2001 Thompson Planning District Development Plan, which recognizes the need to enhance opportunities for recreation within and adjacent to the Planning District (Thompson Community Planning Services Office 2001). Within the City, Maclean Park, located close to City Hall on the banks of the Burntwood River, and the fifteen-kilometre Thompson Millennium Trail are popular for outdoor recreation activities.

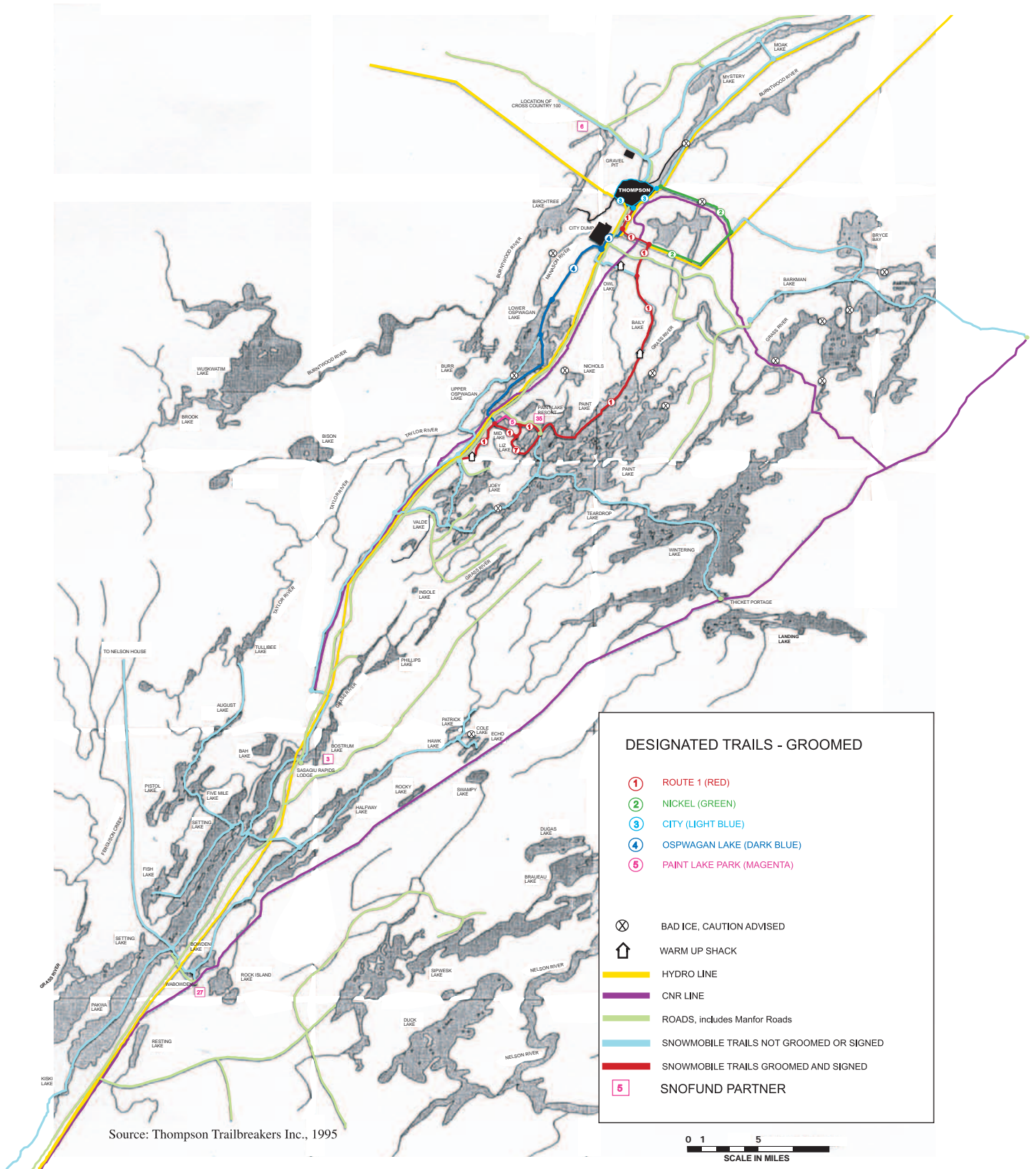
Areas south of Thompson are the most popular outdoor recreation sites for Thompson residents. The primary attraction is Paint Lake Provincial Park, which is located 29 kilometres south on PTH 6 at the junction with PR 375. Paint Lake enjoys widespread use by Thompson residents throughout the year (Manitoba Hydro Mitigation Dept. – Thompson office, personal communication, 2002). Pisew Falls, the third largest falls system in the province, is located further to the south along PTH 6 between Thompson and Wabowden.

The Thompson Trailblazers Inc., a local snowmobiling club, maintain groomed and signed snowmobile trails throughout the Thompson area, as seen in [Figure 5.11](#). (Nicholls 1995).

Areas to the east of Thompson are heavily used for recreational purposes by Thompson residents. These areas include Ore Creek and parts of the Burntwood River system. The Canadian National Railway line corridor (southeast of Thompson) is used for snowmobiling in the winter and all-terrain vehicle use in the summer (Manitoba Hydro Mitigation Dept. – Thompson office, personal communication, 2002).

West and southwest of Thompson, there is substantial snowmobiling in the winter and moose hunting in the fall by Thompson residents. Recreational snowmobiling occurs along the WL 43 transmission line corridor, which runs towards Leaf Rapids. The turn-around point is located near Mile 20 on PR 391 between Thompson and the Nelson House road (Manitoba Hydro Mitigation Dept. – Thompson office, personal communication, 2002).

Figure 5.11 Snowmobile Trails Around Thompson and in the LGD of Mystery Lake



Portions of Birch Tree Lake and the adjacent Burntwood River are also considered good for snowmobiling. The annual CAN-AM PRO Snowmobile Championship is held along the Churchill River Diversion (CRD) backwater that connects to the Burntwood River (Manitoba Hydro Mitigation Dept. – Thompson office, personal communication, 2002).

Areas to the west along PR 391 are used quite heavily by Americans, residents of Thompson and others interested in fishing and out-camps. Many of these activities occur on Notigi and Rat Lakes. Very little recreational activity occurs on Opegano Lake because it is too difficult to access from Jackpine Falls. Manasan Falls and Manasan River, as well as the Portage River, are used to a lesser degree for canoeing. To access these areas a boat has to be launched from the causeway, where there is a Manitoba Hydro boat launch. In general, Birch Tree Lake is the most popular recreational use area to the west of Thompson (Manitoba Hydro Mitigation Dept. – Thompson office, personal communication, 2002).

North of Thompson, McCreedy Campground is the most popular recreation destination. It is situated one mile north of Thompson near the east shore of the Burntwood River. Other areas to the north of Thompson are not used heavily by Thompson residents (Manitoba Hydro Mitigation Dept. – Thompson office, personal communication, 2002). There are four cross-country ski trails located north of the City. The trails include one, four, five and six kilometre loops that proceed to the west along the shore of the Burntwood River (Recreation, Parks and Culture Department 2000).

5.3.2.3 Social Well-being

The following provides an overview of current social well-being in the City of Thompson, based on key person interviews (see [Appendix 2](#) for the Key Person Interview Guides used during interviews).

The City of Thompson is a relatively young community whose character is beginning to change from a single-industry, resource-based community with a transient population (mainly from the south) to a more mature and stable community (e.g., some second-generation residents raised in the community; some people retiring in community; people settling in community for reasons other than mining and related employment). The City includes both Aboriginal and non-Aboriginal people. Aboriginal people (from many different communities) made up about 28 per cent of Thompson's population in 1996 (Statistics Canada, 1996); some estimates place that proportion at 40 per cent or more (see Section 4.3.2.1). Thompson's regional-centre role (including as a road, rail and air

transportation hub) also means that there are many visitors to the City from outlying communities and from the south.

Thompson is described as a very active community with a sports and fitness orientation. Many residents participate in a variety of organized sports and clubs, as well as outdoor recreation activities in all seasons. Activities vary with age and gender. While most activities are considered to be affordable and accessible, some felt that there is a divide between the lifestyles of the poorest families (who are unable to afford these types of activities) and of others with higher incomes in the community. It was noted that there are free activities provided for residents, as well, such as a Sunday swim, Boys and Girls Club and others.

Thompson is a relatively young community, both demographically and in history. The community remains transient in character, with workers and their families tending to leave the community on retirement. However, there are signs of maturing of the community, such as the presence of second-generation residents. This transition has led to a stronger sense of community. Education and other opportunities for the growing Aboriginal population are seen to be improving to some degree, as is the understanding of Aboriginal culture. Racism has been noted by some to be a continuing social problem.

Key social issues facing the community are seen as:

- Housing and Homelessness: Both quality and affordability of housing for residents with low incomes are seen as an issue by some. Thompson's homeless population fluctuates by season, peaking during the summer months. The City has established a shelter for homeless people and hopes to expand these facilities.
- Employment: Low-paying jobs are difficult to fill, as are professional positions (hard to attract people to the north). Lack of flexible day care to accommodate shift work was noted as a barrier for some women wishing to enter the workforce.
- Alcoholism: Thompson is one of nine communities in Canada participating in the "Municipal Drug Strategy". A sub-committee has been developed to address the alcohol and drug problem.

5.3.2.4 Goals and Plans

The City of Thompson and LGD of Mystery Lake, as part of the Thompson Planning District, have prepared a Development Plan, last updated in 2001 (Thompson Community Planning Services Office, 2001). The Plan includes overall goals in the following four areas:

- Environment: The Plan aims to “maximize the quality of the environment of the Thompson Planning District by minimizing the pollution of water, air and land through the preservation of special attributes of the area’s landscape”. The Plan indicates that other goals should be consistent with this goal in order to improve the quality of life of people living in the Planning District.
- Sustainable Development: The Plan states the importance of ensuring that “environmental, economic, social and developmental activities meet the needs of the present without compromising the ability of future generations to meet their needs”.
- Social Development: The Plan aims to “create a desirable community that promotes well-being and safety, as well as extending options to citizens of the Planning District in meeting their basic needs and aspirations”.
- Economic Development: The Plan aims to develop the most diversified economic potential possible while enhancing the general quality of life of local residents. The intent is to provide the maximum level of District-wide services at minimum public expense in accordance with the District’s financial capabilities.

5.3.3 Effects and Mitigation

The Project is expected to have some positive and some negative effects on personal, family and community life in the City of Thompson. Indirect effects from physical, economic and population changes are expected to be more limited than effects in the Local Region due to the nature of the effects and to the scale of the community. The experience of these changes would vary for individuals, for families and for the community as a whole, depending upon their experience of the effects of the Project, and their interpretation of the change (i.e., how those changes fit with their world today and their goals and aspirations for the future).

5.3.3.1 Road Traffic and Safety

Construction Phase

This section presents estimated effects on road traffic and safety in Thompson and vicinity. Roads in the City of Thompson are discussed separately from PTH 6 south of the City. Also, see Section 5.2.3.1 pertaining to PR 391 running west of the City toward Nelson House.

City of Thompson

Within Thompson, the Project has the potential to affect internal traffic volumes as a result of:

- Trucks traveling to and from the rail transshipment point where construction materials will be off-loaded from rail cars. The rail yard is located on the eastern edge of the City and trucks will travel west along Station Road to PR 391 to proceed to the Project site.
- Trucks passing directly through Thompson on PR 391 (called Mystery Lake Road within the City) en route to the Project site (ND Lea 2002).

Construction of the Project will result in an increase in traffic volumes in the City of Thompson, principally due to the shipment of construction materials by truck from the Thompson rail yard, and directly from Winnipeg to the Project site.

The primary effect of the Project on traffic in Thompson is expected to occur during the summer months of Stage 1 Project construction (Years one and two) and during the core construction period of Stage 2 (Years three to five).

[Table 5.10](#) below illustrates anticipated effects on Thompson's internal traffic volumes at the City's four main signalized intersections during three stages of Project construction, as compared to current volumes (ND Lea 2002).

Table 5.10 Traffic Effects at Signalized Intersection

Mystery Lake Road Intersection	2000 Total Daily Traffic	Percent Increase in Daily Traffic					
		Stage 1 (Years 1-2)		Stage 2 Core Construction (Years 3-5)		Project Wrap-Up (Year 6)	
		Winter	Summer	Winter	Summer	Winter	Summer
Burntwood Road	7,640	0	0.5%	0.3%	0.4% to 0.5%	0.1%	0.3%
Thompson Drive South	11,355	0	0.7%	0.3% to 0.4%	0.4% to 0.5%	0.1%	0.3%
Station Road	14,515	0	0.8%	0.4%	0.6%	0.2%	0.3%
Thompson Drive North	14,360	0	1.1%	0.6%	0.8%	0.3%	0.5%

Source: ND Lea 2002.

As shown in Table 5.10 above, minimal effects are expected to total daily traffic levels at Thompson’s four signalized intersections during construction of the Project. The largest effect is expected to occur at Thompson Drive North, which must accommodate all traffic destined for the construction site. However, the additional traffic is small enough to be considered within the normal fluctuations of day-to-day traffic (ND Lea 2002).

Traffic effects along PR 391 are presented in Section 5.2.3.1.

PTH 6 South of Thompson

Project construction will result in an increase in traffic volumes along PTH 6, as trucks transport construction materials from Winnipeg north along PTH 6.

Construction-related traffic on PTH 6 is comprised entirely of trucks travelling directly from Winnipeg to the Project site. Table 5.11 below describes the estimated increase in traffic volumes on PTH 6 (rounded to the nearest five vehicles) as a result of Project construction for construction stage and season (ND Lea 2002). Based on this table, PTH 6 is expected to experience an additional 5 to 20 trucks/cars between Winnipeg and Thompson, depending on the construction stage and season. In 2000, PTH 6 handled between 400 and 2,300 vehicles per day (and between 480 and 2,600 vehicles per day in the summer) throughout its length. There is sufficient capacity for the additional traffic on PTH 6 since, as a primary arterial, PTH 6 is able to accommodate up to 5,000 vehicles per day (ND Lea 2002).

Table 5.11 PTH 6 Forecasted Daily Traffic

Trucks-Day (In and Out)	Stage 1 (Years 1-2)		Stage 2 Core Construction (Years 3-5)		Project Wrap-Up (Year 6)	
	Winter	Summer	Winter	Summer	Winter	Summer
PTH 6	0	5	5-10	10-20	5	10

Source: ND Lea 2002.

Table 5.12 below outlines the anticipated per cent increase in traffic volumes along different sections of PTH 6 during each stage of Project construction. In 1997, Manitoba Transportation and Government Services (MTGS) estimated that PTH 6 had an average annual growth in traffic volumes of 1.5 per cent in the North and 3.0 per cent in the South. Therefore, in most cases, the increase in traffic due to the construction of the Project is either less than or slightly higher than the expected growth in one year on PTH 6 (ND Lea 2002).

Overall, Section 3 of PTH 6 is expected to experience the largest increase in traffic volumes as a result of Project construction (up to a 4.2 per cent increase during the summers of Stage 2); however, this is due to its relatively low existing traffic volumes. As a primary arterial, all sections of PTH 6 can accommodate up to 5,000 vehicles per day, so there is sufficient capacity in Section 3 to accommodate the anticipated Project-related increase in traffic (ND Lea 2002).

Table 5.12 Per Cent Increase in Traffic Volumes on PTH 6 as a Result of Project Construction

Trucks-Day (In and Out)	Stage 1 (Years 1-2)		Stage 2 Core Construction (Years 3-5)		Project Wrap-Up (Year 6)	
	Winter	Summer	Winter	Summer	Winter	Summer
Section 1	0	0.2%	0.2%-0.4%	0.4%-0.8%	0.2%	0.4%
Section 2	0	0.4%	0.5%-1.0%	0.8%-1.6%	0.5%	0.8%
Section 3	0	1.0%	1.2%-2.4%	2.1%-4.2%	1.2%	2.1%
Section 4	0	0.4%	0.5%-1.0%	0.8%-1.6%	0.5%	0.8%
Overall (Weighted Average)	0	0.5%	0.7%-1.3%	1.1%-2.2%	0.7%	1.1%

Source: ND Lea 2002.

Note:

- 1 - The change in traffic levels during the winter is calculated based on the Average Annual Daily Traffic (AADT) and the change in the summer is calculated based on the Average Summer Daily Traffic (ASDT).

Operations Phase

During operations, no effects are expected on traffic in the City of Thompson or on PTH 6 south of Thompson.

5.3.3.2 Outdoor Recreation

Construction Phase

The Wuskwatim Lake area currently sees very limited use by Thompson residents for outdoor recreation purposes, mainly due to difficulty in gaining access to this area. Similarly, the Burntwood River system, between Thompson and Wuskwatim Lake, sees limited recreational use due to difficult travel conditions; a limited number of residents visit the Birch Tree Lake area. Although the Project access road will be developed during the first year of the construction phase, use of the road by the general public will be restricted via a staffed gate at the junction of PR 391. According to the Access Management Plan ([Volume 3](#), Project Description), use of the road will be limited to those involved in the construction project and others permitted by the Limited Partnership (e.g., resource harvesters with registered traplines in the area). Therefore, outdoor recreation is unlikely to change as a result of Project construction.

Project workers visiting Thompson on their days off (expected to be Saturday evenings and Sundays) may place additional demands on some of Thompson's recreational facilities. The Thompson Golf Course is the only recreation facility currently operating near capacity. There are plans to construct an additional nine holes and, if developed, this would help to meet existing and future demands. All other recreational activities have excess capacity to accommodate increased demand.

There are no plans for mitigation as the impact on Thompson recreation is expected to be minimal.

Operations Phase

Once in operation, the Project would cause changes in water levels and flows immediately downstream of the facility ([Volume 4](#)). For Thompson residents who use Birch Tree Lake for outdoor recreation purposes, no noticeable effects are predicted from the Project with respect to Birch Tree Lake water levels and flows during open water conditions or to Birch Tree Lake winter season conditions.

Once the construction phase is complete, the staffed gate on the access road at PR 391 will be removed. New access to the Wuskwatim Lake area (and potentially the south side the Burntwood River via the dam structure) may generate new interest in outdoor recreation in this area by Thompson residents. However, the Limited Partnership intends to develop measures to manage access. The operations portion of the Access Management Plan will be developed by the Limited Partnership prior to the beginning of the operations phase. This may mean that use of the new access road to the Wuskwatim Lake area may be restricted in some way and this may limit the extent or type of new use for outdoor recreation purposes.

To the extent that new access may be permitted by Thompson residents, the Limited Partnership will take measures to forewarn visitors of existing water-based travel hazards on Wuskwatim Lake and downstream of the facility on the Burntwood River (see Section 5.2.3.1).

5.3.3.3 Social Well-being

Construction Phase

During the construction phase, social well-being may be affected in the following ways:

- **Participation in Employment and Business Opportunities:** New household income for workers and their families associated with businesses that are likely to benefit from support for construction contractors (e.g., transportation, bulk fuel) and services to workers (e.g., restaurants and taverns).
- **Visits by Construction Workers:** During the construction phase, the majority of workers would reside in the construction camp adjacent to the construction site. They would work six days each week and Sunday would be a day off. The camp would be fully serviced with recreation facilities and a tavern. However, it is anticipated that many workers may travel to Thompson on Saturday evenings for shopping, restaurant meals and visits to taverns. This group of construction workers is likely to add to the level of activity in the City and may create some social interaction issues, including some new demands for the police service (re: taverns). In general, however, the City is of a scale that is expected to be able to absorb these visitors. Over the six-year construction period, the number of construction workers in camp would peak at

between 145 and 540 workers during the summer construction seasons; fewer workers would be at the site during winter months.

- Population In-migration: During the construction phase, several senior Manitoba Hydro and contractor staff who would be at the construction project for many years, are expected to move with their families to Thompson. In addition, some workers from outlying communities (such as South Indian Lake or Split Lake) who gain employment at the construction project may move with their families to Thompson and commute to the work site. New workers and their families are likely to be welcomed by the City of Thompson, since they would to a small degree help to offset declines in population. However, the prospect of construction employment could also draw individuals and their families to the City on a speculative basis, in the hope of gaining construction employment at the Project site. To the extent that these people may be without means or may run out of funds before they obtain employment, social services and affordable housing may be stressed. Though it is difficult to predict how many people may migrate speculatively, it would be important for relevant service providers in the City of Thompson to prepare contingency plans and to monitor carefully population change (see Section 4.3.3).

Operations Phase

Once the construction phase is complete, the Project would operate with a small staff of six. With such a small workforce and no associated population change, no change in social well-being for the City of Thompson is anticipated.

5.3.3.4 Goals and Plans

Construction Phase

During the construction phase, effects on community life in the City of Thompson, the next closest community to the proposed Project, could result from the community's role as a regional service centre. These include services for workers during days off, some construction-related road and air traffic and services for construction contractors. Effects could also result from some potential in-migration associated with Project-related economic opportunities. Economic effects are consistent with the Development Plan goal of economic diversification. Physical and biophysical effects of the Project are not expected to extend to the City of Thompson or LGD of Mystery Lake (see [Volume 4](#),

Physical Environment, [Volume 5](#), Aquatic Environment and [Volume 6](#), Terrestrial Environment). Therefore, the Project would be consistent with environmental and sustainable development goals.

Operations Phase

No effects on goals and plans of the City of Thompson are expected during the operations phase.

5.3.4 Cumulative Effects

Effects of the Project on personal, family and community life of residents of Thompson in the Project Region would be expected to combine with effects of the Gull/Keeyask Generating Station Project if it is developed for in-service in 2012 (possibly beginning construction in 2007).⁴⁹ In particular, the proximity of Thompson to the Gull/Keeyask Generation Project site would mean that it could play a regional-centre role, to some extent, for that project if it is developed. Two main effects could combine with effects of the Project:

- In-migration: there is potential for some in-migration of population to Thompson in anticipation of obtaining work on the Project. This could further strain resources that are in place for people without means (e.g., affordable housing, social services).
- Worker Visits: Construction workers from the Gull/Keeyask construction project could visit Thompson for leisure activities (shopping, restaurant meals, taverns) at approximately the same time that Wuskwatim construction workers would be visiting. The combined effect would be greatest in the summer season. However, the added effect of the Gull/Keeyask Project would be limited because the overlapping construction workforce would be smaller during the first two years of that construction project than peak years that follow. While Thompson may see a temporary noticeable effect (e.g., visits to taverns and recreation facilities), the scale of the community will tend to minimize the significance of any short-term changes.

Effects of other projects considered in the cumulative effects assessment (see Section 2.2.7) are not expected to combine with the limited effects on personal, family and community life in Thompson.

⁴⁹ Section 2.2.7 provides full details on the approach and methodology for assessing cumulative effects and the future projects and activities included as part of the cumulative effects assessment for this SEIA.

5.3.5 Residual Effects and Significance

This section presents the estimated residual effects of the Project on personal, family and community life of Thompson residents in the Project Region. Residual effects incorporate, to the extent possible, cumulative effects noted in Section 5.3.4 and consider the effects of impact management measures (both mitigation and enhancement measures) that are planned. Based on criteria outlined in Section 2.2.8, the significance of these effects for the community as a whole is assessed, along with the general direction of change (positive, negative or elements of both).

Construction Phase

Within Thompson, traffic volumes are expected to increase slightly at each of the City's four main signalized intersections during construction of the Project. However, the addition of traffic is small enough to be considered within the normal fluctuations of day-to-day traffic. There will be a slight increase in traffic volumes along PTH 6 during construction of the Project (up to a maximum of 20 additional vehicles during Stage 2 of construction). As a primary arterial, PTH 6 currently experiences traffic volumes of up to 2,300 vehicles per day, but is designed to accommodate up to 5,000 vehicles per day. As such, there is sufficient capacity for the anticipated Project-related increase in traffic. Minor negative effects on traffic are expected.

No effects on outdoor recreation are anticipated as a result of the construction project. Even with the cumulative effect of the Gull/Keeyask workforce (during the start-up phase of that project), Project construction is expected to have a minor effect on recreation opportunities for Thompson residents. The Thompson Golf Course is currently operating near capacity and is the only recreational facility that may experience difficulty in meeting additional demands from the Wuskwatim construction workforce.

Social well-being may be affected in a minor positive way by increased income for workers in businesses serving the construction project. Minor negative effects could result from in-migration of population by those seeking work who may have limited means and could strain services that are already stretched in this area (negative effect). New senior Manitoba Hydro and contractor staff and their families, expected to settle in Thompson for the duration of the construction phase, would have a minor positive effect in stemming the decline in population. Workers visiting Thompson during leisure time would have a minor negative effect on social well-being.

The Project appears to be compatible with economic, environmental and sustainable development goals of the Thompson Planning District.

Operations Phase

Once in operation, there could be an increase in recreational activity (primarily sport hunting and possibly fishing) by Thompson residents in the Wuskwatim area if new access is permitted on the access road and to new boat launches at the Project site. Access, however, is contingent upon the final terms of the operations portion of the Access Management Plan to be developed during Project construction.

5.3.6 Monitoring and Follow-up

Although effects on traffic in Thompson and PTH 6 south of Thompson are expected to be minimal, monitoring of traffic accidents during construction should be undertaken.

Monitoring of in-migrating population was noted in Section 4.3.6. No other monitoring or follow-up measures are considered to be necessary.

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7.0 GLOSSARY OF TERMS

1996 NFA Implementation Agreement:

The agreement signed by NCN, Hydro, Canada and Manitoba to implement the 1977 Northern Flood Agreement (NFA) and resolve most, although not all, outstanding claims stemming from the Churchill River Diversion (CRD) Project.

Aboriginal Community:

A community where most of the residents are Aboriginal (i.e., Indian, Métis or Inuit) and that has a separate form of government, provides some level of service to its residents, and has clear community boundaries.

Active Labour Force:

All persons 15 years of age and over, excluding institutional residents, who are either employed, or unemployed and actively looking for work.

Advanced Education and Training (AET):

AET refers to Manitoba Advanced Education and Training, a department of the Government of Manitoba. It is anticipated that AET will act as the referral agent for job-order hiring of workers for the Project construction workforce. AET, Employment and Training Services will also be the lead agency to assist northern Aboriginal residents that are not NCN members to develop career plans and access pre-project training programs.

Adverse Effects:

Negative effects on the environment and people that may result from a proposed project.

Agreement-in-Principle (AIP):

In 2001, NCN and Manitoba Hydro ratified an Agreement-in-Principle (AIP) regarding possible future development of the Wuskwatim (Generation and Transmission) and Notigi projects, including the opportunity for NCN to invest in the ownership of the Wuskwatim Generation Project ([see Appendix 5](#)). The AIP is not legally binding, but sets out a series of topics to be discussed between the parties to develop a binding Project Development Agreement (PDA) and related agreements. NCN members approved the AIP through a secret ballot ratification vote. The AIP was also approved by the Manitoba Hydro Board and the Minister Responsible for Manitoba Hydro. Manitoba Hydro and NCN are now working to develop a binding Project Development Agreement (PDA), based on the topics identified in the AIP.

Atoskiiwin Training and Employment Centre (ATEC):

ATEC is a community-based training agency and Centre of Excellence created by NCN to advance skill development of its members and other northern Aboriginal residents. ATEC will provide the organizational capacity and physical facilities for NCN members and northern Aboriginal residents to undertake training designed to develop skills required for the construction of the Project. ATEC is also intended to provide for the long-term training needs of NCN members and other northern Manitoba Aboriginal residents after Project construction is completed.

Allied Hydro Council:

The Allied Hydro Council (AHC) is a group of representatives from the International and Local Unions whose members work on the Project. The AHC is the exclusive labour bargaining agent for negotiating and administering the Burntwood Nelson Agreement.

Burntwood Nelson Agreement (BNA):

The Burntwood Nelson Agreement (BNA) is the collective agreement between the Hydro Project Management Association (HPMA), representing Manitoba Hydro management, and the unions of the Allied Hydro Council (AHC), representing workers, that will be in effect during the construction of the Project. (See below for definition of collective agreement.) The BNA was under renegotiation at the time of writing. It is expected that the renegotiated BNA will be completed and in effect for construction of the Project.

Churchill River Diversion (CRD):

Developed by Manitoba Hydro in the 1970s, the CRD involved development of control structures at Notigi Lake and at Missi Falls, which diverted a major share of the Churchill River down the Rat/Burntwood Rivers into Split Lake and the lower Nelson River. The CRD resulted in substantial flooding in Southern Indian Lake, the Nelson House Resource Management Area (RMA) and near Nelson House.

Collective Agreement:

A contract between a union and an employer. It covers all of the working conditions (salary, vacation, etc.) for all the union members employed by the employer. These employees no longer sign individual employment contracts with the employer because they are all covered by the same contract – the collective agreement.

Construction Support (Positions):

Construction support occupations are jobs that are needed during the Project construction, but do not involve actually building the Project. Catering and clerical staff are examples of construction support positions. Training and work experience requirements can range from on-the-job training for entry level positions to more than 3 years of formal training and professional experience for the most highly-skilled positions.

Cumulative Effects:

The combined effects of several projects on the environment. Cumulative effects have to be considered as part of the environmental assessment process.

Dam:

A dam is a structure holding back water, usually in a river. It may be designed to control the flow and release of water. It may also be designed to generate electricity.

Designated Trades (Positions):

Designated trades are occupations that have formal apprenticeship programs that provide supervised training leading to certification as a fully-qualified journeyman in the trade. Apprenticeships in the designated trades typically entail four or more years of in-class technical training and on-the-job work experience. Carpenters and electricians are examples of occupations in the designated trades.

EIS Guidelines:

EIS Guidelines are the April 29, 2002 *Guidelines for the Preparation of an Environmental Impact Statement for the Wuskwatim Generation Project* issued by Manitoba Conservation. Draft Guidelines prepared by federal/provincial officials were made available in December 2001 and comments were invited until March 2002. Public review included meetings held by the Clean Environment Commission (CEC) in Thompson, Nelson House, Winnipeg and The Pas. In April 2002, the CEC issued a report on these public meetings, and provided recommendations on the Draft Guidelines.

Employment Rate:

The proportion of individuals in the active labour force that have a job. This includes all persons working for wages or salaries, all self-employed persons (with or without paid help) working in their own business, farm or professional practice, and all persons working without pay on a family farm or business during the reference week.

Environmental Impact Assessment (EIA):

An assessment for the provincial and/or federal governments of the effect that a project will have on the environment.

Environmental Impact Statement (EIS):

Under provincial and federal environmental laws, an EIS is a document that has to be produced by anyone who wants a license to build a major project that might affect the environment. An EIS has to provide detailed information about what effects, positive and negative, a proposed project would have on the environment and people.

Environmental Management Team (EMT):

A team of consultants jointly selected by Manitoba Hydro and NCN to manage the environmental planning and assessment studies for the Wuskwatim Generation and Transmission Projects. The EMT reports to both NCN and Manitoba Hydro.

Future Development:

Defined in the 1996 NFA Implementation Agreement, Future Development means any new development by Manitoba Hydro arising from the CRD which has a reasonable likelihood of having a material and continuing physical, chemical or biological impact on a water body within the Nelson House Resource Management Area, including the Wuskwatim Generation Project. Article 8 of the 1996 NFA Implementation Agreement sets out a process for NCN and Manitoba Hydro to discuss potential Future Developments that could affect the Nelson House Resource Management Area and NCN members.

Generating Station:

A generating station is a structure that produces electricity. It can be run many different ways, including by burning coal or natural gas, or by using water (hydro) power. If it uses water, the station will normally be a dam, with turbines inside.

Hydro Projects Management Association:

The Hydro Projects Management Association (HPMA) is an association of representatives of the owners and contractors for new hydroelectric generation projects and converter station projects involving Manitoba Hydro. The HPMA serves as the exclusive management bargaining agent for negotiating and administering the Burntwood Nelson Agreement.

Infrastructure Development (Stage 1 of Project construction):

Infrastructure development refers to the construction of the infrastructure required for Project construction, including the access road, water and sewer lines and buildings for the construction camp, and contractor work areas. Infrastructure development would take place during the first two years of Project construction.

Job Order Process:

The process followed by contractors to hire employees to fill positions in the construction workforce for the Project. During construction of the Project, the vast majority of contractor-hired positions will be filled through a job order process where contractors have to submit their job requests, or job orders, to Manitoba Advanced Education and Training, which will act as the referral agency for the Project. AET will refer qualified job candidates from its database of applicants to contractors in a timely and unbiased manner, and according to the terms of any employment preference(s) set out in the Burntwood Nelson Agreement.

Kilovolt (kV):

A volt is the unit of electrical force or potential that causes a current to flow in a circuit. One kilovolt (kV) is equal to 1,000 volts.

Labour Force Participation:

Individuals in the potential labour force who are working or actively looking for work.

Limited Partnership:

A special form of partnership – it involves a “general partner” (usually a corporation) and a “limited partner”. The limited partner has limited liability and is only liable for its partnership interest (a fixed amount of money that is agreed to in advance). The general partner is liable for all of the partnership’s debts and makes all of the management decisions for the partnership.

Local Region:

A study region identified as part of the socio-economic impact assessment (SEIA) for the Wuskwatim Generation Project. The Local Region is defined largely by the boundaries of the Nelson House Resource Management Area (RMA). It includes all members of the Nisichawayasihk Cree Nation (NCN), including those members living in the First Nation community of Nelson House, and the Northern Affairs community of Nelson House, referred to locally as the Métis community. The Northern Affairs community of South Indian Lake has also been included in the Local Region, given their close relationship with NCN and Nelson House (80 to 90 per cent of South Indian Lake residents are NCN members).

Major Works Construction (Stage 2 of Project construction):

Major works construction for the Project refers to the construction of the actual dam, powerhouse, turbines, gates, generators and associated structures that make up the generating station. Major works construction takes place once the infrastructure development is largely completed, primarily in Years three to six of Project construction.

Megawatt (MW):

A watt is the unit used to measure electric power. It takes 100 watts to light a 100-watt light bulb. A megawatt (MW) is 1,000,000 watts, enough power to light 10,000 100-watt light bulbs.

Mitigation:

Measures implemented to address adverse effects stemming from a project or activity.

Negotiated Contracts:

Negotiated contracts are contracts for specific components of work on the Project that are directly negotiated between Manitoba Hydro and qualifying companies and do not go through the usual tendering process. The criteria and conditions for negotiated contract work are set out in Manitoba Hydro's Northern Purchasing Policy.

Non-designated Trades:

Non-designated trades are jobs that are directly involved with the construction of the Project, but do not have formal apprenticeship programs leading to a Journeyperson certification. Examples of non-designated trades are labourers, heavy equipment operators, vehicle drivers (teamsters), rebar workers and cement masons. Training and work experience requirements can range from basic on-the-job training for entry level positions to more than 3 years of formal training and professional experience to be fully qualified for the most highly-skilled positions.

Northern Flood Agreement (NFA):

A 1977 adverse effects agreement between Canada, Manitoba, Manitoba Hydro, and the Northern Flood Committee (representing five First Nations, including NCN). Among other things, the NFA allowed the participating First Nations and their members to claim compensation for the adverse effects of the CRD and the Lake Winnipeg Regulation projects and any future developments by Manitoba Hydro arising from these projects.

Northern Region:

A study region identified as part of the socio-economic impact assessment (SEIA) for the Wuskwatim Generation Project. The Northern Region has been defined as the portion of northern Manitoba that extends as far south as the Northern Employment Preference Boundary under the current Burntwood Nelson Agreement (BNA).

Peak Positions:

Peak positions are a measure of the maximum number of positions required for the construction workforce during a specified time period. In the EIS, the maximum numbers of peak positions are estimated separately for the Infrastructure and Major Works Construction stages. The estimated peak for each construction stage consists of the maximum number of positions that could be available for all the occupations required during that stage of construction. The peaks for the different occupations would not occur simultaneously and would not last for the entire construction stage. As a result, the actual peak workforce requirement at any given time would be lower than the maximum peak number estimated for the construction stage.

Person-years:

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.

Potential Labour Force:

All persons in a given population, excluding institutional residents, age 15 years and over.

Project Development Agreement (PDA):

A legally binding agreement between NCN and Manitoba Hydro that outlines the obligations of signatory parties should the Wuskwatim Generation Project proceed. NCN and Manitoba Hydro are currently negotiating a binding PDA based on the AIP. The PDA will cover many issues, including the partnership arrangements between NCN and Manitoba Hydro, training, employment and business opportunities, the water regime for the Project and compensation for adverse effects.

Project Region:

A study region identified as part of the socio-economic impact assessment (SEIA) for the Wuskwatim Generation Project. The Project Region is a broad region identified initially for the purposes of the PIP consultation. For the PIP, it included “potentially affected publics”, defined (prior to completing the EIS) as those who potentially might see themselves as being affected by project-induced biophysical changes (e.g., by upstream or downstream water-based effects, by effects on land or air, or by related biophysical or resource effects) from any component of project construction or operation. The Project Region for the Project includes the Local Region as well as other communities in the vicinity of the Burntwood and Nelson Rivers, extending from South Indian Lake to Gillam and the Fox Lake First Nation community on the lower Nelson River, and including the Cross Lake and Norway House communities on the upper Nelson River. A complete list of communities in the Project Region is provided in [Figure 2.3](#) and [Table 2.1](#) of this Volume 8.

Public Involvement Plan (PIP):

A plan developed by Manitoba Hydro and NCN outlining their approach to public consultation for the Wuskwatim Generation and Transmission Projects. The purpose of the PIP is to provide the public, particularly those who may potentially be affected by the projects, with early and ongoing opportunities to review information on, and provide their views about, the projects. The PIP was submitted to federal and provincial regulators in August, 2002.

Registered Trapline (RTL):

In the 1940s, the Province of Manitoba developed the registered trapline system which divides most of the province into relatively large RTL Districts that are subdivided into individual registered traplines. Manitoba Conservation allocates registered traplines to specific trappers who maintain an individual right to trap within the designated boundary of the trapline. Where Registered Trapline Districts are operated as community trapping blocks (such as at Nelson House), a local fur council recommends to Manitoba Conservation the allocation of specific trapping areas to members of the local trapping community. The RTL system makes each RTL trapper responsible for managing the harvest of all fu-bearers in the trapper's trapline area to ensure sustained production over the years.

Reserve Land:

Land that has been set aside by the federal government for the use and occupancy of a specific First Nation.

Residual Effects:

Effects of a project that are expected to remain after mitigation measures have been implemented.

Resource Management Area (RMA):

A Resource Management Area (RMA) is an area to be jointly managed by a Resource Management Board established by agreement between Manitoba and a First Nation or a local Aboriginal Community. The Resource Management Area for Nelson House means the area described and shown in Schedule 6.1 of the 1996 NFA Implementation Agreement; the Resource Management Board for the Nelson House RMA was established pursuant to Article 6 of the 1996 NFA Implementation Agreement.

Socio-Economic Impact Assessment (SEIA):

A socio-economic impact assessment (SEIA) provides detailed information on what effects, both positive and negative, a proposed project may have on people, their lifestyles and their communities. An SEIA also provides ways to address effects that are likely to be adverse, from the point of view of an affected population, and to enhance those effects perceived to be positive. An SEIA is often part of the environmental impact assessment (EIA) for a proposed project.

Tendering:

Providing different groups and companies with an opportunity to bid on a job. The general principle is that the qualified bidder with the lowest price gets the job. “Open tendering” means that anyone can bid. “Restricted tendering” means that only some types of companies can bid.

Treaty Land Entitlement (TLE):

Refers to land owed to certain First Nations under the terms of the Treaties signed by the First Nations and Canada between 1871 and 1910. Each Treaty provided that Canada would provide reserve land to First Nations based on population size; however, not all First Nations received their full allocation of land. In 1997, the Manitoba Treaty Land Entitlement Agreement was signed by the TLE Committee of Manitoba Inc. (representing 20 First Nations), Canada and Manitoba. This Framework Agreement is intended to fulfill Canada’s outstanding debt of lands owed to the 20 TLE Committee member First Nations.

Transformer/Switching Station:

A transformer/switching station is a facility that transforms electricity from a generating station to the higher voltages needed to carry it on the existing transmission system, or a facility that transforms electricity from the transmission system to the lower voltages needed to distribute it to customers.

Transmission Line:

Transmission lines carry the power produced at a generating station to other parts of Manitoba Hydro’s existing power system.

Unemployment Rate:

The proportion of individuals in the active labour force that do not have a job. The classification of unemployed does not account for the underemployed, or those individuals working part time but desiring a full time position. As well, the classification does not include discouraged workers: those individuals who wish to work but have ceased looking because they do not believe they will find a job.

Union:

An organization of workers. When a group of workers (a bargaining unit) decides that it wants a union to represent it, it goes to a labour board. If a majority of workers in the bargaining unit wants the union, the board certifies the union as the representative for that bargaining unit. That means that the union represents 100 per cent of the workers in that bargaining unit. It negotiates a collective agreement for all of these workers.

APPENDIX ONE

Socio-economic Baseline Setting Appendix

Proposed Wuskwatim Generating Station

Completed as part of the
Socio-Economic Impact Assessment
for the Proposed
Wuskwatim Generating Station

April 2003

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1.0 INTRODUCTION

The following appendix outlines relevant baseline and project setting features for the Socio-economic Impact Assessment of the proposed Wuskwatim Generating Station.

The document is divided into the three geographic areas of impact considered as part of the assessment:

- **Local Region:** Nisichawayasihk Cree Nation (primarily the reserve community of Nelson House), Nelson House Northern Affairs community, South Indian Lake Northern Affairs community and Nelson House Resource Management Area.
- **Project Region:** All communities included as part of the Project Region in the Public Involvement Plan that relate to the proposed Wuskwatim Generating Station (excluding communities potentially affected only by transmission facilities).
- **Northern Region:** That portion of Northern Manitoba within the Northern preference boundary of the Burntwood Nelson Agreement (BNA).

Profile areas included as part of this appendix are outlined below. The extent to which each or all of these topics has been reviewed for the noted geographic regions was based on the anticipated extent of related Project impacts.

Profile Areas:

- Community history and trends
- Population
- Economy
 - Employment, training and income
 - Business
- Built environment and community services
 - Transportation infrastructure
 - Community infrastructure and services
 - Municipal finance

This appendix was compiled using readily available data and key person interviews.

2.0 LOCAL REGION

The following outlines socio-economic baseline features for the Local Region associated with the proposed Wuskwatim Generating Station project. For the purposes of this study, the Local Region is defined largely by the boundaries of the Nelson House Resource Management Area (RMA) (see [Figure 2.1](#) below). It includes the Nisichawayasihk Cree Nation (NCN) - primarily those members living in the First Nation community of Nelson House, and the Northern Affairs community of Nelson House, referred to locally as the Métis community. The Northern Affairs community of South Indian Lake has also been included in the Local Region, given their close relationship with Nelson House (80 to 90 per cent of South Indian Lake residents are NCN members).

Profile areas included as part of this section are:

- Population
- Economy
 - Employment, training and income
 - Business
- Built environment and community services
 - Transportation infrastructure
 - Community infrastructure and services
 - Municipal finance

Although this section of the report focuses primarily on NCN members living on-reserve at Nelson House, where relevant and if information was available, members living off-reserve are also profiled. For each of the profile areas, attempts were made to collect data for both on- and off-reserve populations, dating as far back as possible (typically the last ten years).

This portion of the baseline appendix was completed using available data (including community-based data gathering and traditional knowledge) and key person interviews with Nelson House residents.

In total, 10 individuals were interviewed to complete this portion of the study. [Table 2.1](#) below indicates the individuals with whom key person interviews were carried out, as well as the topics addressed during each interview.

Figure 2.1
Local Region Map

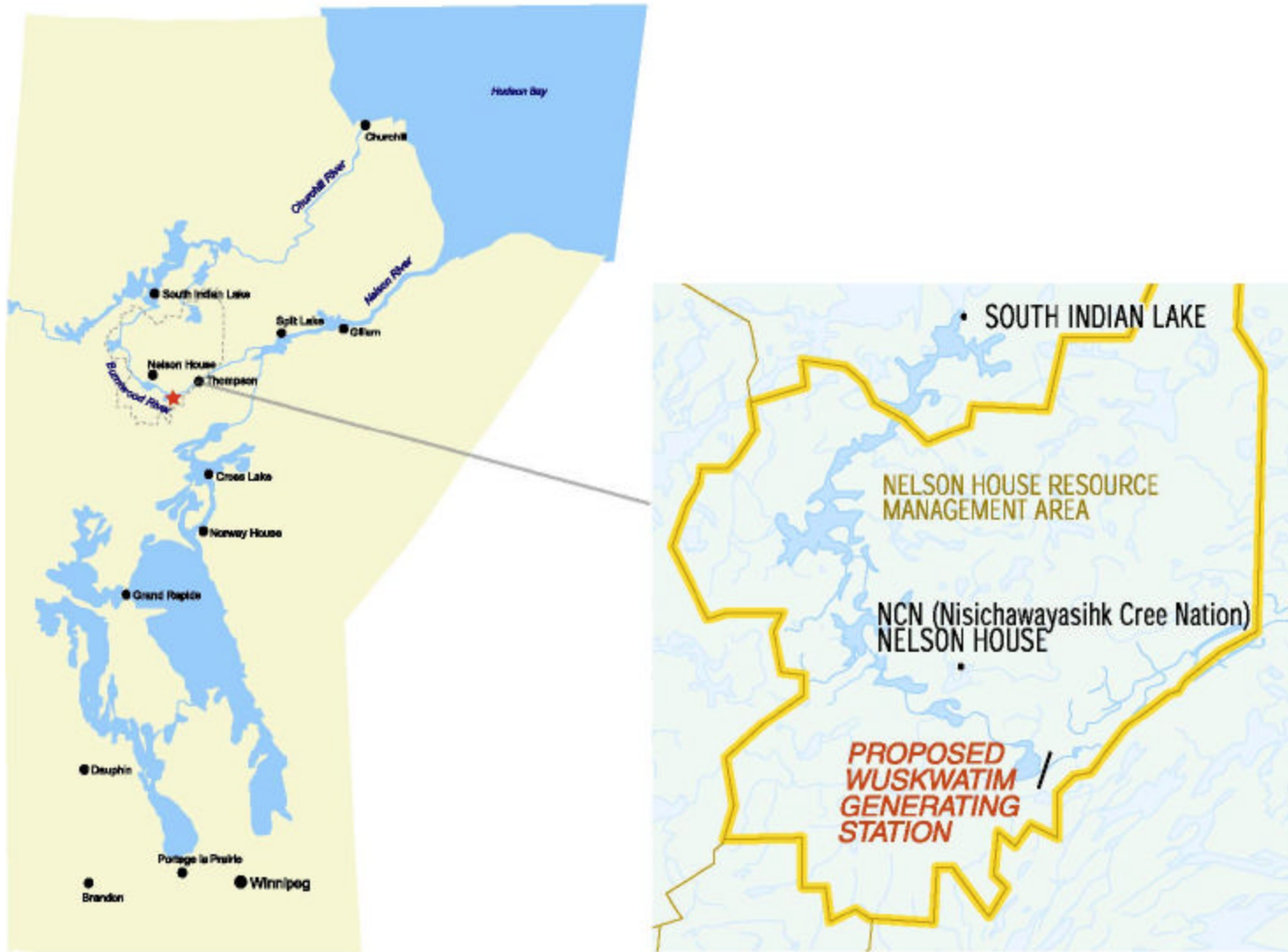


Table 2.1
Key Person Interviews Carried Out in Nelson House and Topics Addressed

Name	Position	Topics Addressed
Leonard Linklater	General Manager, Nelson House Economic Development Corporation (NHDC)	<ul style="list-style-type: none"> • NHDC and its businesses • Nelson House economy • Planned future NHDC businesses • Privately owned business in Nelson House • Role of the OT Trust
Dave Kobliski	Manager, Meetah Building Supplies	<ul style="list-style-type: none"> • Meetah company information • Nelson House economy • Up-coming community projects • Potential impacts of Wuskwatim
Joan Hart	Manager, the Lucky Dollar Food Store	<ul style="list-style-type: none"> • Family Foods company information • Nelson House economy • Local labour force • Potential impacts of Wuskwatim
Charlie Hart	Fire and Emergency Services consultant, former member of the Nelson House Fire Department, and owner of a local confectionary	<ul style="list-style-type: none"> • Emergency services in Nelson House • Nelson House economy • Local labour force • Upcoming projects in the community • Potential impacts of Wuskwatim
Greg Bunn	Manager, Nelson House Forest Industries (NHFI)	<ul style="list-style-type: none"> • NHFI company information • Nelson House economy • Local labour force • Training gaps in the local labour force • Upcoming NHFI projects • Potential role of NHFI in the proposed Wuskwatim project
Marilyn Spence	Manager, NCN Social Assistance	<ul style="list-style-type: none"> • Social Assistance services in Nelson House • Future changes to the Social Assistance program
Fred Prince	NCN Human Resources	<ul style="list-style-type: none"> • NCN Human Resources programs • Nelson House economy • Local labour force
Dennis Linklater	Chair, NCN Housing Authority Board of Directors; Office Manager, NCN Future Development	<ul style="list-style-type: none"> • Nelson House businesses • Local labour force

Name	Position	Topics Addressed
Earl Linklater	Co-owner, Cree Man Consulting	<ul style="list-style-type: none">• Cree Man Consulting company information• Mineral exploration and claims in the Nelson House RMA
Earl Hart	Co-owner, Bear Paw Security Services	<ul style="list-style-type: none">• Bear Paw Security Services company information• Nelson House businesses

2.1 POPULATION

2.1.1 Nelson House Reserve (NCN)

Population data for total NCN membership was available from Indian and Northern Affairs Canada (INAC) and from Health Canada's First Nations and Inuit Health Branch (FNIHB) for the eleven-year time period from 1990 to 2000. The data provided by INAC are based on membership information collected by the Nisichawayasihk Cree Nation Membership Clerk in Nelson House and forwarded to INAC each year. Data from both sources have been cited as differences in collection methods can lead to differences in the populations reported for First Nation communities.

Table 2.2 below highlights changes in the total NCN population from 1990 to 2000 using both of the above-noted data sources. According to these data sources, over the eleven-year time period from 1990 to 2000, total NCN membership increased from between 2,959 (INAC) and 2,842 (FNIHB) members to between 4,499 (INAC) and 4,271 (FNIHB) members. This represents an overall growth rate of between 4.3 (INAC) and 4.2 (FNIHB) per cent annually.

Table 2.2
Changes in Total NCN Membership based on INAC and
First Nations and Inuit Health Branch (FNIHB) Data: 1990 to 2000

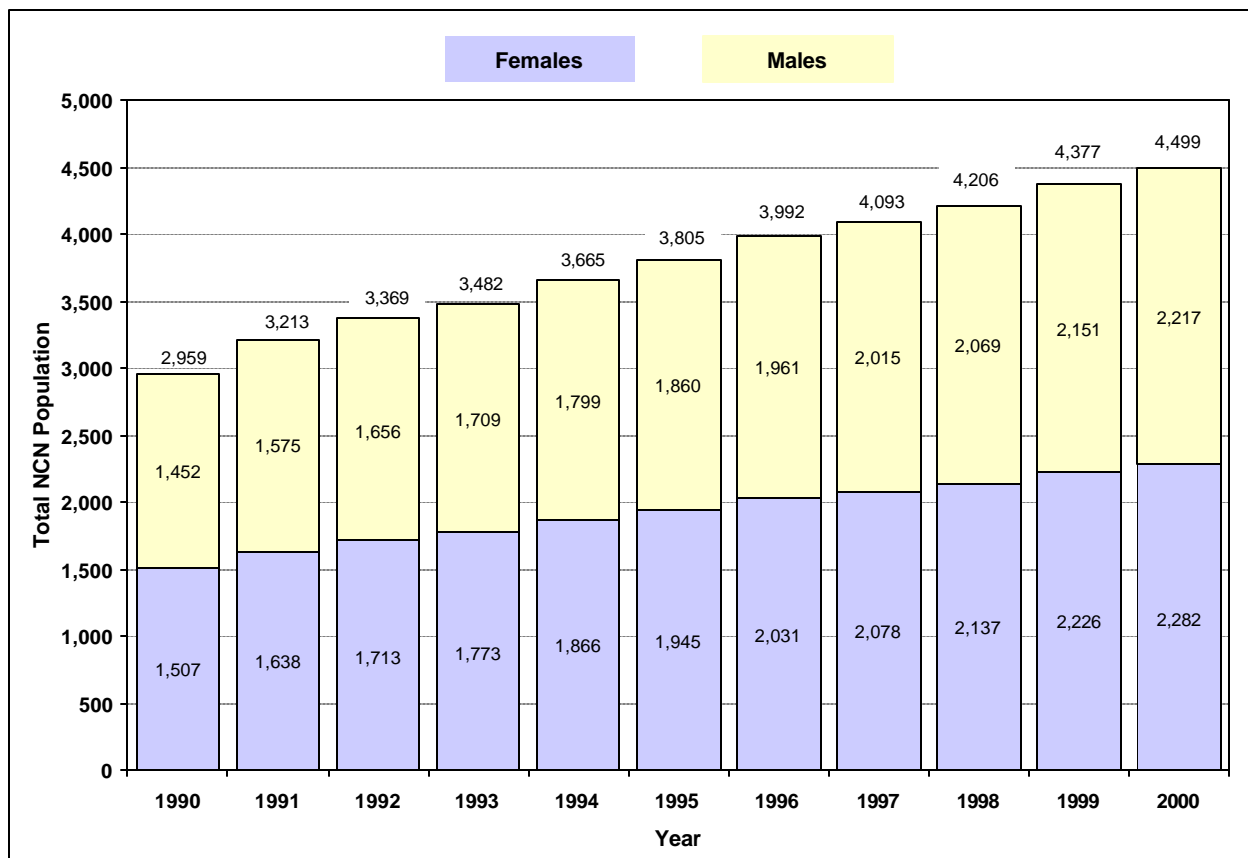
Year	Total NCN Membership	
	INAC Data ¹	FNIHB Data ²
1990	2,959	2,842
1991	3,213	2,935
1992	3,369	3,228
1993	3,482	3,351
1994	3,665	3,505
1995	3,805	3,707
1996	3,992	3,900
1997	4,093	4,012
1998	4,206	4,134
1999	4,377	4,271
2000	4,499	4,377

Sources:

1. Population data for 1990 to 2000 from INAC records. INAC records are based on membership data collected by the NCN Membership Clerk in Nelson House and forwarded to INAC each year.
2. Population Totals Report for 1990 to 2000 from Health Canada, First Nations and Inuit Health Branch, Status Verification System (SVS).

Figure 2.2 highlights changes in the male, female and total NCN population based on the INAC data. Full details of the NCN population by age and sex for each year from 1990 to 2000 are outlined in the sections below.

Figure 2.2
Changes in Total NCN Membership Based on INAC Data: 1990 to 2000



Source:

1. Population data for 1990 to 2000 from INAC records. INAC records are based on membership data collected by the NCN Membership Clerk in Nelson House and forwarded to INAC each year.

2.1.1.1 Current On-reserve, Off-reserve & Crown Land Populations

Table 2.3 below indicates the numbers of members living on-reserve and on Crown land (primarily in South Indian Lake and in the Nelson House Northern Affairs community) versus off-reserve (Thompson, Winnipeg, Brandon, etc.) for the period from 1990 to 2000 based on INAC and FNIHB data. Both data sources indicate that, during this time period, the proportion of members living on-reserve and on Crown land versus those living off-reserve remained fairly constant.

It should be noted that Crown land populations are divided into those on own band Crown land, other band Crown land and no band Crown land. According to INAC, these are defined as follows:

- *On Own Band Crown Land* - Indian Register Individuals who are band members or who are descendants of band members residing on Crown land in a community administered by

their band. In 1994 and 1995, 12 members lived on own band Crown land. This did not occur in any other year between 1990 and 2000.

- On *Other Band* Crown Land - Indian Register Individuals who are band members or who are descendants of band members residing on Crown land in a community administered by other bands. Between 1990 and 2000 no members lived on this type of Crown land.
- On *No Band* Crown Land - Indian Register Individuals who are band members or who are descendants of band members residing on Crown land not administered by any specific band (INAC 2000). Between 1990 and 2000, virtually all NCN members lived on this type of Crown land, primarily in South Indian Lake and the Northern Affairs community of Nelson House, lived on what is termed no band Crown land.

Band records indicate that most of the members living off-reserve live in Thompson, Winnipeg and Brandon.

Table 2.3
Total NCN Members Living On-Reserve and on Crown Land
Compared to Those Living Off-Reserve: 1990-2000

YEAR	INAC ¹		FNIHB ²	
	On-Reserve & On Crown Land	Off-Reserve	On-Reserve & On Crown Land	Off-Reserve
1990	2,110	849	2,018	824
1991	2,270	943	2,110	825
1992	2,377	992	2,298	930
1993	2,447	1,035	2,369	982
1994	2,797	868	2,484	1,021
1995	2,758	1,047	2,827	880
1996	2,956	1,036	2,915	985
1997	2,998	1,095	2,957	1,055
1998	3,079	1,127	3,063	1,071
1999	3,223	1,154	3,149	1,122
2000	3,341	1,158	3,279	1,098

Sources:

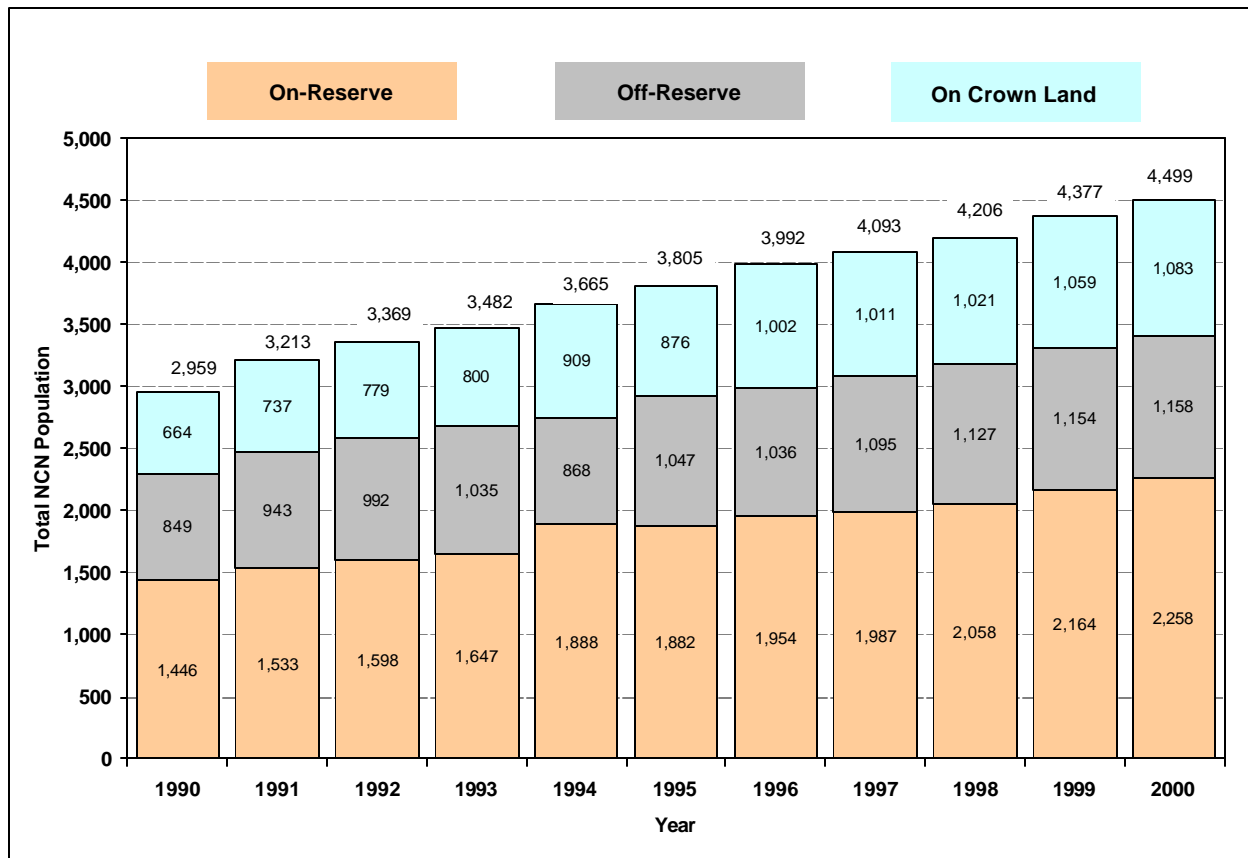
1. Population data for 1990 to 2000 from INAC records. INAC records are based on membership data collected by the NCN Membership Clerk in Nelson House and forwarded to INAC each year.
2. Population Totals Report for 1990 to 2000 from Health Canada, First Nations and Inuit Health Branch, Status Verification System (SVS).

Notes:

1. Off-reserve population includes members living on another reserve. Most off-reserve members live in Thompson, Winnipeg and Brandon.
2. Crown land populations include members living on own band Crown land, on other band Crown land and on no band Crown land. Between 1990 and 2000 all NCN members living on Crown land lived on no band Crown land, with the exception of 1994 and 1995 when 12 members (all under the age of 5) lived on own band Crown land. Most of the members living on no band Crown land reside at South Indian Lake and the Northern Affairs Community of Nelson House.

Figure 2.3 depicts visually the changes that have occurred in on-reserve, off-reserve and Crown land populations of NCN members between 1990 and 2000 based on INAC data ¹.

Figure 2.3
Total NCN Population On-Reserve, Off-Reserve and On Crown Land: 1990 to 2000



Source:

1. Population data for 1990 to 2000 from INAC records. INAC records are based on membership data collected by the NCN Membership Clerk in Nelson House and forwarded to INAC each year.

Notes:

1. Off-reserve population includes members living on another reserve. Most off-reserve members live in Thompson, Winnipeg, Leaf Rapids and Brandon.
2. South Indian Lake and Nelson House Northern Affairs populations represent the Crown land population, with the exception of 1994 and 1995 when 12 of the members noted lived on own band Crown land.

2.1.1.2 Population by Age and Sex

Table 2.4 below outlines the number of members living on-reserve and on Crown land versus living off-reserve by sex for the time period from 1990 to 2000 based on INAC and FNIHB data. This table

¹ Only INAC data are available to depict on-reserve, off-reserve and Crown-land populations of NCN members separately. Data collection are via self-reporting and tracking done by the NCN Band Membership Clerk.

indicates that slightly more female than male NCN members lived off-reserve than on-reserve and on Crown land during this time period.

Table 2.4
Total NCN Members by Sex Living On-Reserve and
on Crown Land versus Off-Reserve: 1990- 2000

YEAR	INAC				FNIHB			
	On-Reserve & On Crown Land		Off-Reserve ²		On-Reserve & On Crown Land		Off-Reserve ²	
	Female	Male	Female	Male	Female	Male	Female	Male
1990	1,008	1,102	499	350	959	1,059	485	339
1991	1,097	1,173	541	402	1,006	1,104	484	341
1992	1,137	1,240	576	416	1,107	1,191	536	394
1993	1,175	1,272	598	437	1,134	1,235	569	413
1994	1,355	1,442	511	357	1,194	1,290	588	433
1995	1,330	1,428	615	432	1,371	1,456	523	357
1996	1,426	1,530	605	431	1,411	1,504	581	404
1997	1,448	1,550	630	465	1,428	1,529	611	444
1998	1,488	1,591	649	478	1,486	1,577	619	452
1999	1,558	1,665	668	486	1,524	1,625	654	468
2000	1,617	1,724	665	493	1,591	1,688	634	464

Sources:

1. Population data for 1990 to 2000 from INAC records. INAC records are based on membership data collected by the NCN Membership Clerk in Nelson House and forwarded to INAC each year.
2. Population Totals Report for 1990 to 2000 from Health Canada, First Nations and Inuit Health Branch, Status Verification System (SVS).

Notes:

1. Off-reserve population includes members living on another reserve.
2. Crown land populations include members living on own band Crown land, on other band Crown land and on no band Crown land. Between 1990 and 2000 all NCN members living on Crown land lived on no band Crown land, with the exception of 1994 and 1995 when 12 members (all under the age of 5) lived on own band Crown land. Most of the members living on no band Crown land reside at South Indian Lake.

Table 2.5 below shows changes in the male to female ratio on-reserve and on Crown land versus off-reserve over the ten-year period from 1990 to 2000 using the INAC and FNIHB data sets. The table indicates that during this period, the ratio of males to females on-reserve at Nelson House and on Crown land has remained constant at approximately 1.1. Off-reserve, the ratio of male to female NCN members over this eleven-year period remained at approximately 0.7. This indicates that, in general, over this time period a greater number of males lived on-reserve than females or, conversely, that more females than males lived off-reserve. This suggests a higher propensity for females than males to move away from the NCN reserve to non-reserve and other reserve settings.

Table 2.5
Male to Female Ratio of NCN Members Living On-Reserve,
Off-Reserve and on Crown Land: 1990 to 2000

Year	Male to Female Ratio			
	INAC ¹		FNIHB ²	
	NCN Members On-Reserve & Crown Land	NCN Members Off-Reserve	NCN Members On-Reserve & Crown Land	NCN Members Off-Reserve
1990	1.1	0.7	1.1	0.7
1991	1.1	0.7	1.1	0.7
1992	1.1	0.7	1.1	0.7
1993	1.1	0.7	1.1	0.7
1994	1.1	0.7	1.1	0.7
1995	1.1	0.7	1.1	0.7
1996	1.1	0.7	1.1	0.7
1997	1.1	0.7	1.1	0.7
1998	1.1	0.7	1.1	0.7
1999	1.1	0.7	1.1	0.7
2000	1.1	0.7	1.1	0.7

Sources:

1. Population data for 1990 to 2000 from INAC records. INAC records are based on membership data collected by the NCN Membership Clerk in Nelson House and forwarded to INAC each year.
2. Population Totals Report for 1990 to 2000 from Health Canada, First Nations and Inuit Health Branch, Status Verification System (SVS).

Notes:

1. Off-reserve population includes members living on another reserve.
2. Crown land populations include members living on own band Crown land, on other band Crown land and on no band Crown land. Between 1990 and 2000 all NCN members living on Crown land lived on no band Crown land, with the exception of 1994 and 1995 when 12 members (all under the age of 5) lived on own band Crown land. Most of the members living on no band Crown land reside at South Indian Lake.

2.1.1.2.1 On-Reserve Population by Age and Sex

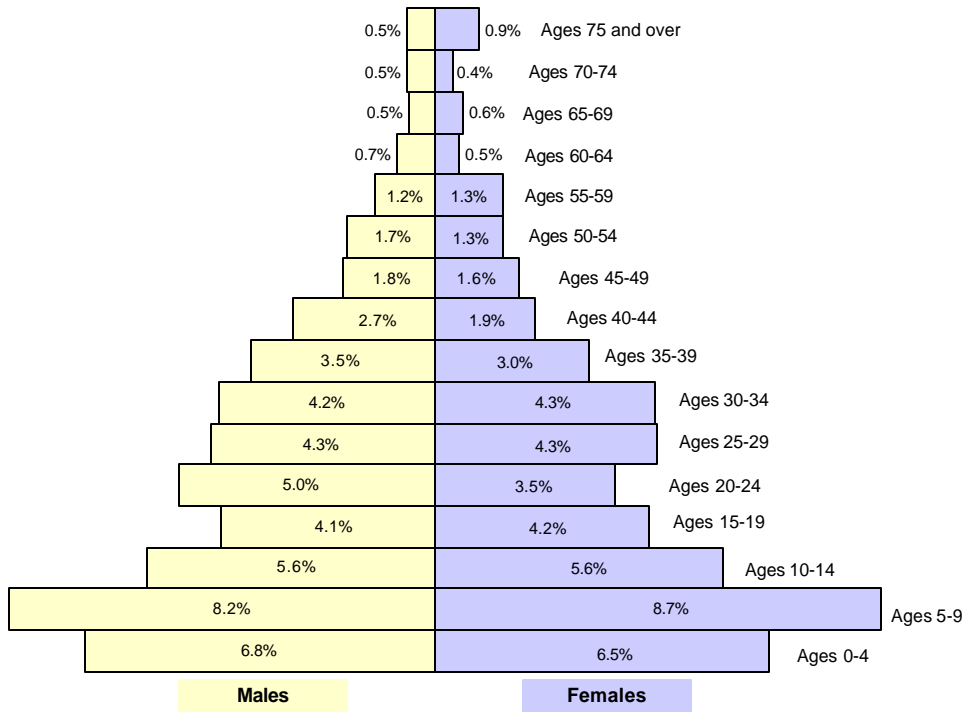
The 2000 on-reserve population by age and sex is depicted in [Figure 2.4](#) below based on INAC data. For the sake of comparison, charts of the population distribution for all Manitoba First Nations and for Manitoba as a whole are also shown and were developed using 2000 Manitoba Health population data.

Figure 2.4 illustrates graphically that NCN's on-reserve population is much younger than the provincial population. In 2000, 63 per cent of NCN members on-reserve were less than 30 years old and 43 per cent were of school-age (between the ages of 4 and 18). Provincially, in 2000 only 41 per cent of the population was less than 30 years old and only 21 per cent were between 5 and 19 years of age (roughly school-age). On average, on-reserve First Nation populations as a whole in Manitoba had approximately 66 per cent of their population below the age of 30.

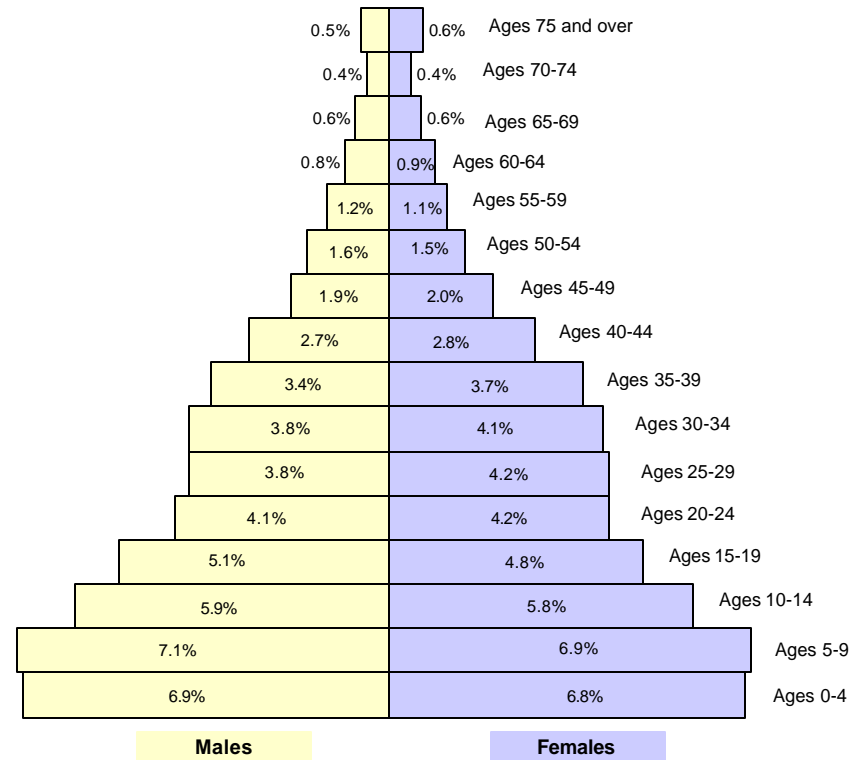
The proportion of NCN members of labour force age on-reserve (ages 15 to 64) in 2000 was 56 per cent and the proportion of seniors (ages 65 and over) was 3 per cent. Both of these are less than their respective provincial proportions in 2000. During 2000, 65 per cent of the provincial population was of labour force age and 14 per cent were over the age of 65. These values are similar to those seen among Manitoba's total on-reserve First Nation population, in which 57 per cent of the population was of labour force age and 3 per cent of the population were seniors.

Figure 2.4
NCN Population On-Reserve by Age and Sex in 2000
compared to the Provincial Population Distribution in 2000

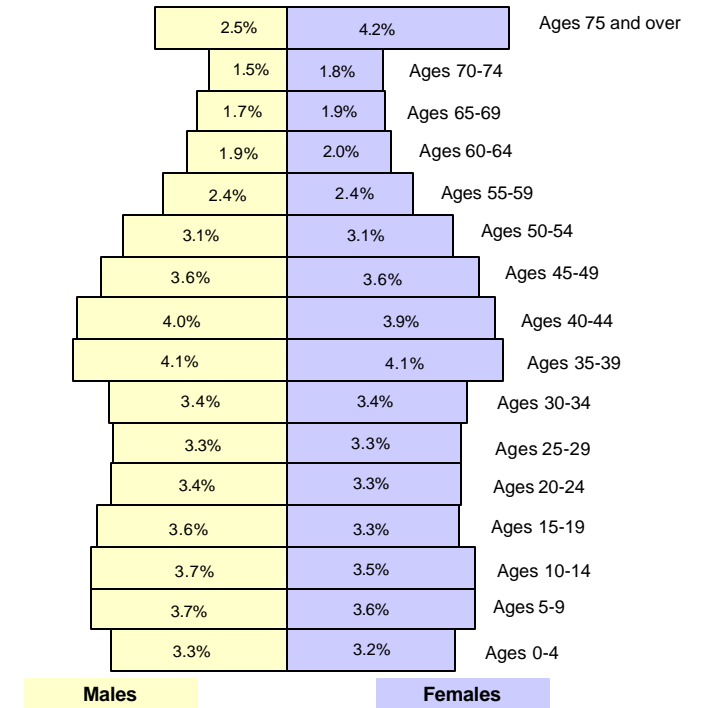
NCN On-Reserve Population



Manitoba On-Reserve First Nation Population



Manitoba Population



Sources:

1. Population data for 2000 NCN population from INAC records. INAC records are based on membership data collected by the NCN Membership Clerk in Nelson House and forwarded to INAC each year.
2. Manitoba Health Population Report, June 1, 2000 (used for 2000 Manitoba First Nation On-reserve population distribution and 2000 Manitoba population distribution).

Note:

1. The above charts show the proportion of NCN members in each age category living on-reserve, as well as the proportion of the Manitoba population in each age category.

Table 2.6 and Figure 2.5 below indicate the changing proportions of school-age, labour force and senior members on-reserve at Nelson House from 1990 to 2000 based on INAC data. They indicate that the on-reserve population has changed slightly over the eleven-year time period. In particular, the proportion of school-age children in the population has increased, while the proportion of the population of labour force age has decreased, as has the proportion of seniors. This is a sign that the population will continue to grow at a significant rate in the foreseeable future.

Table 2.6
Proportion of School-age Children, Total Labour Force and Seniors
in the NCN On-Reserve Population: 1990 to 2000

	Year										
	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Proportion of school-age children (ages 4-18)	36%	32%	32%	32%	32%	34%	34%	36%	37%	37%	43%
Proportion of labour force age (Ages 15-64)	64%	62%	61%	62%	60%	57%	57%	56%	56%	55%	56%
Proportion of seniors (65 years +)	5%	5%	5%	4%	4%	4%	4%	4%	4%	4%	3%

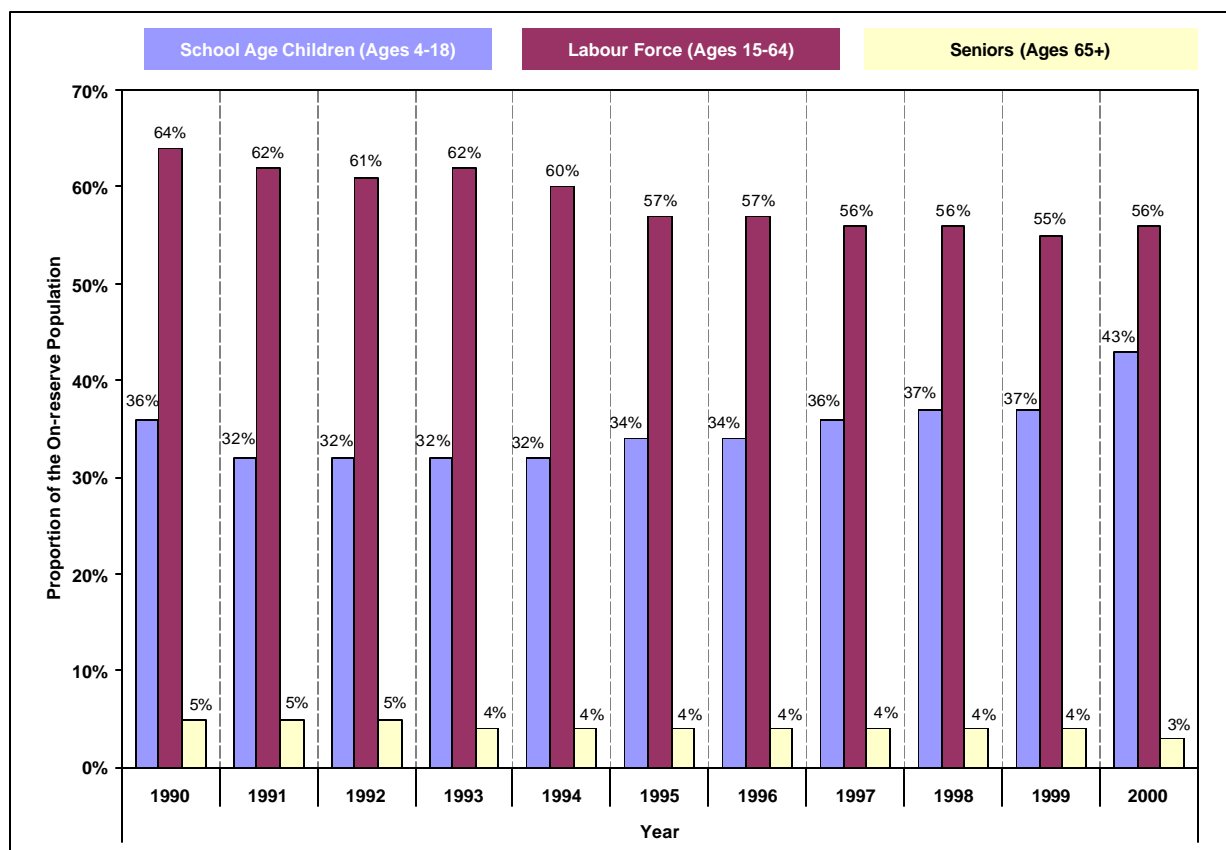
Source:

1. Population data for 1990 to 2000 from INAC records. INAC records are based on membership data collected by the NCN Membership Clerk in Nelson House and forwarded to INAC each year.

Note:

1. Totals do not add to 100% because of overlap in age between the population categories of school-age children (ages 4 to 18) and total labour force (ages 15 to 64).

Figure 2.5
Changing Proportions of School-age Children, those of Labour Force Age and Seniors
Living On-Reserve at Nelson House: 1990 to 2000



Source:

1. Population data for 1990 to 2000 from INAC records. INAC records are based on membership data collected by the NCN Membership Clerk in Nelson House and forwarded to INAC each year.

Note:

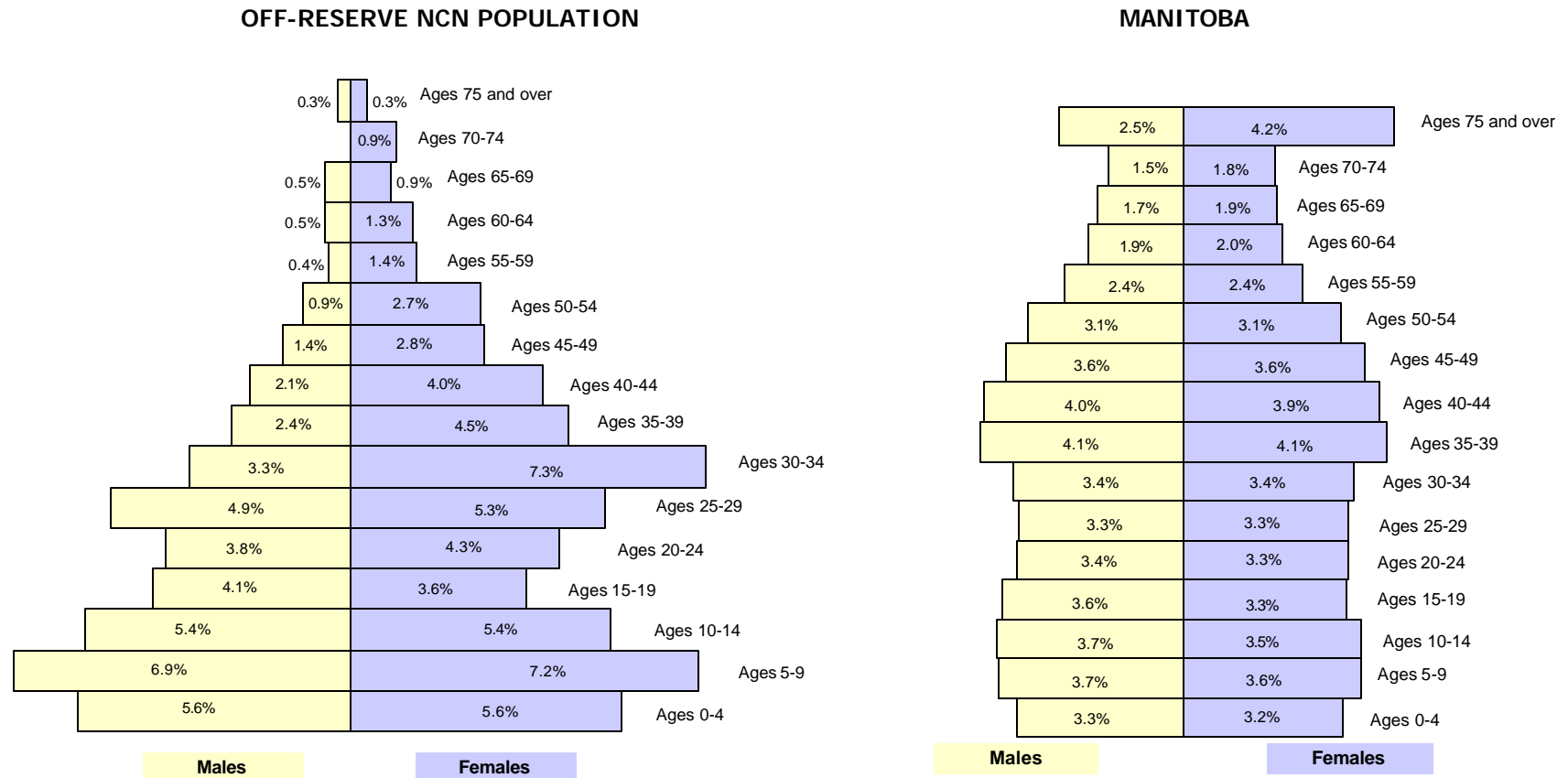
1. Totals do not add to 100% because of overlap in age between the population categories of school-age children (ages 4 to 18) and those of labour force age (ages 15 to 64).

2.1.1.2.2 Off-Reserve Population Distribution by Age and Sex

Figure 2.6 below illustrates that, much like the on-reserve population, the off-reserve population of NCN members contains a large proportion of young members. In 2000, 62 per cent of NCN members off-reserve were less than 30 years of age and 34 per cent were of school-age (between the ages of 4 and 18 years old). Provincially, in 2000 only 41 per cent of the population was less than 30 years old and only 21 per cent were between 5 and 19 years of age (roughly school-age).

The proportion of NCN members living off-reserve of labour force age (ages 15 to 64) in 2000 was 61 per cent, while the proportion of seniors (ages 65 and over) was 3 per cent. Both of these are less than seen provincially in 2000. During 2000, 65 per cent of the provincial population was within the total labour force and 14 per cent were over the age of 65.

Figure 2.6
NCN Population Off-Reserve by Age and Sex in 2000
compared to the Provincial Population Distribution in 2000



Sources:

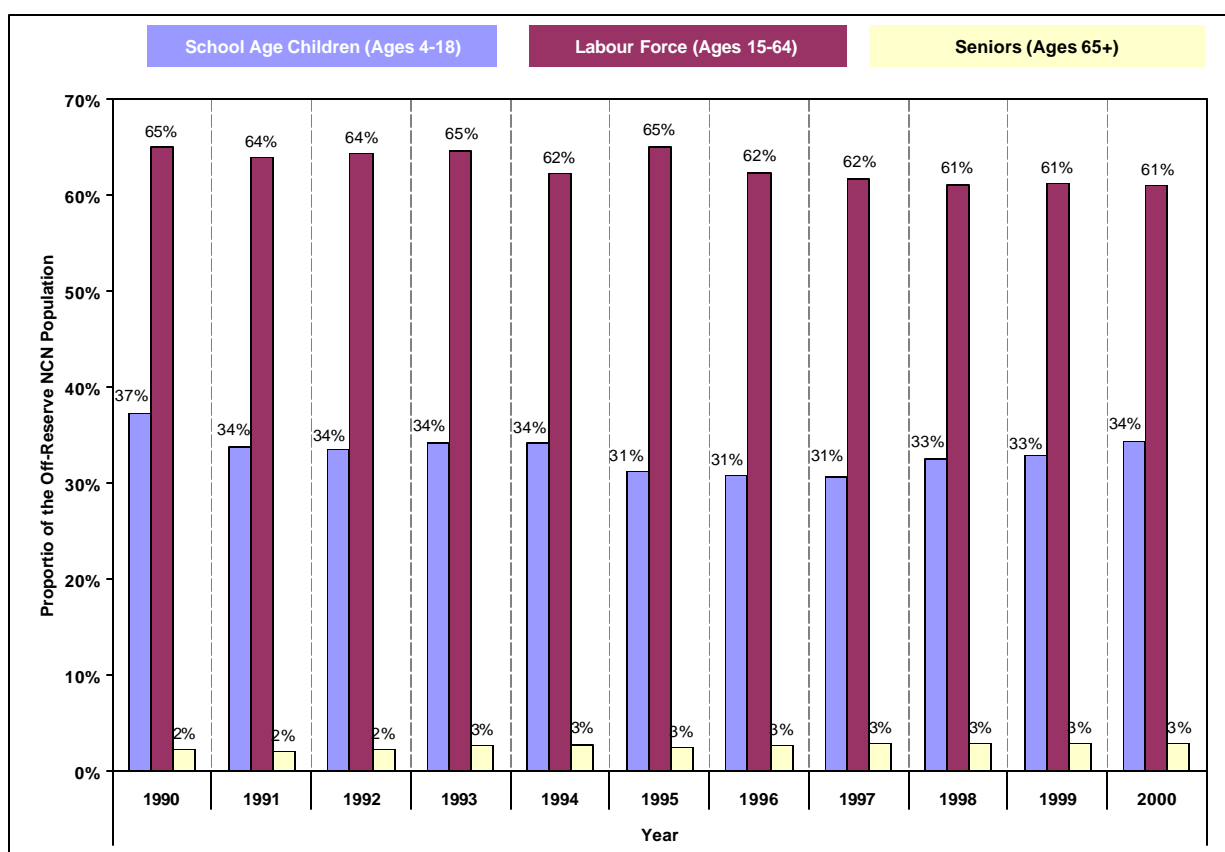
1. Population data for 2000 NCN population from INAC records. INAC records are based on membership data collected by the NCN Membership Clerk in Nelson House and forwarded to INAC each year.
2. Manitoba Health Population Report, June 1, 2000 (used for 2000 Manitoba population distribution).

Note:

1. The above charts show the proportion of NCN members in each age category living off-reserve, as well as the proportion of the Manitoba population in each age category.

As with the on-reserve population, the proportion of the population off-reserve that is school-aged, in the labour force or a senior changed over the ten year period from 1990 to 2000. Figure 2.7 below illustrates this graphically. It indicates that the proportion of school-age children, those of labour force age and seniors living off-reserve remained fairly constant from 1990 to 2000. This is different than the trends on-reserve, where the proportion of school-age children increased and the proportion of labour force aged residents and seniors decreased over the ten-year period. The proportion of school-aged children, however, was still quite high at between 31 and 37 per cent. This indicates that the population off-reserve will likely grow at a significant rate in the foreseeable future.

Figure 2.7
Changing Proportions of School-age Children, those of Labour Force Age and Seniors
Among NCN Members Living Off-Reserve: 1990 to 2000



Source:

1. Population data for 1990 to 2000 from INAC records. INAC records are based on membership data collected by the NCN Membership Clerk in Nelson House and forwarded to INAC each year.

Notes:

1. Off-reserve population includes members living on another reserve.
2. Totals do not add to 100% because of overlap in age between the population categories of school-age children (ages 4 to 18) and those of labour force age (ages 15 to 64).

2.1.1.2.3 Population on Crown Land by Age and Sex

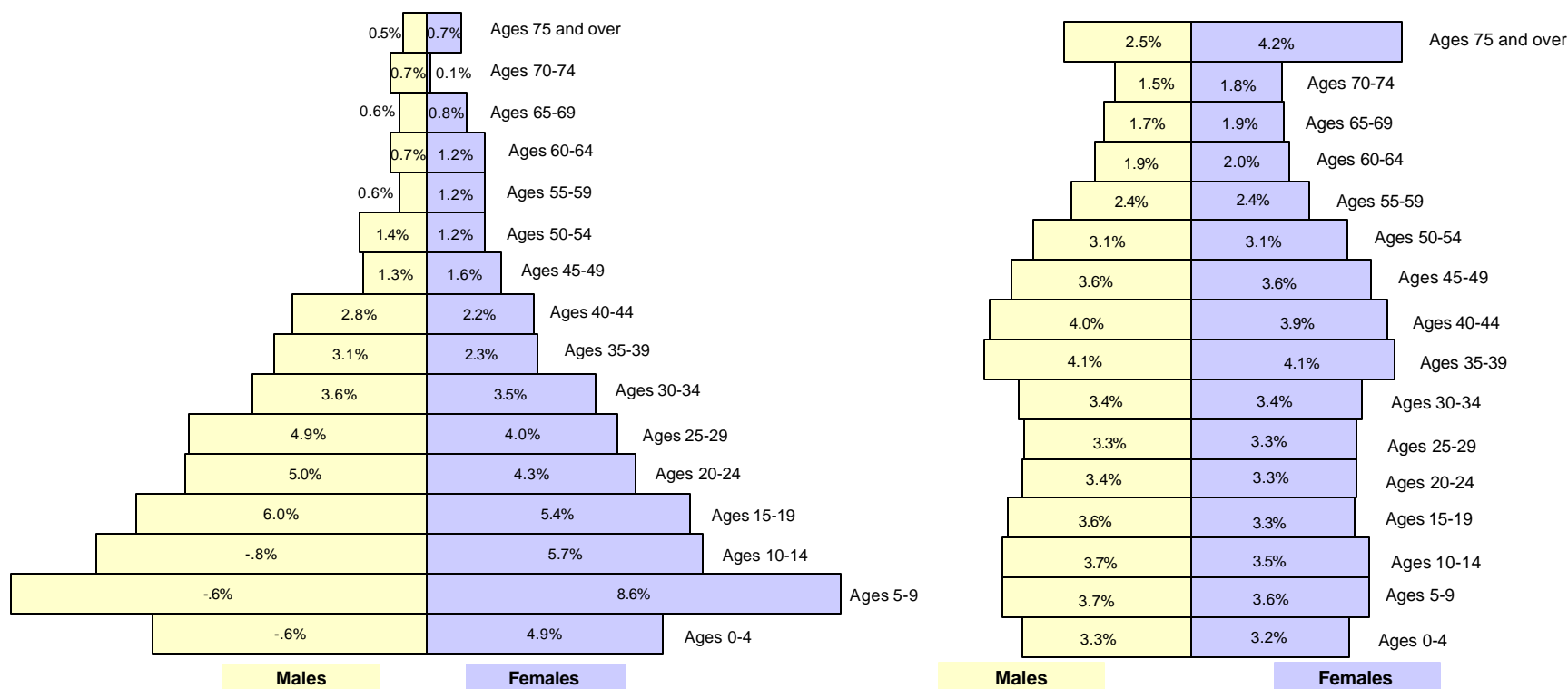
The population of NCN members living on Crown land (primarily South Indian Lake and the Northern Affairs community of Nelson House) by age and sex is outlined in [Figure 2.8](#) below. As with on- and off-reserve NCN populations, the population on Crown land has a very high proportion of young members. In 2000, 70 per cent of members on Crown land were less than 30 years of age and 41 per cent were of school-age (between the ages of 4 and 18 years old). This is higher than seen on- or off-reserve and much higher than seen provincially in 2000.

Given the high proportion of young members living on Crown land, the proportion of NCN members of labour force age (ages 15 to 64) living on Crown land in 2000 was only 56 per cent, compared to 65 per cent provincially. Similarly, the proportion of seniors (ages 65 and over) was quite low, at only 3 per cent, compared to 14 per cent provincially.

Figure 2.8
NCN Population On Crown Land by Age and Sex in 2000
compared to the Provincial Population Distribution in 2000

NCN POPULATION ON CROWN LAND

MANITOBA



Sources:

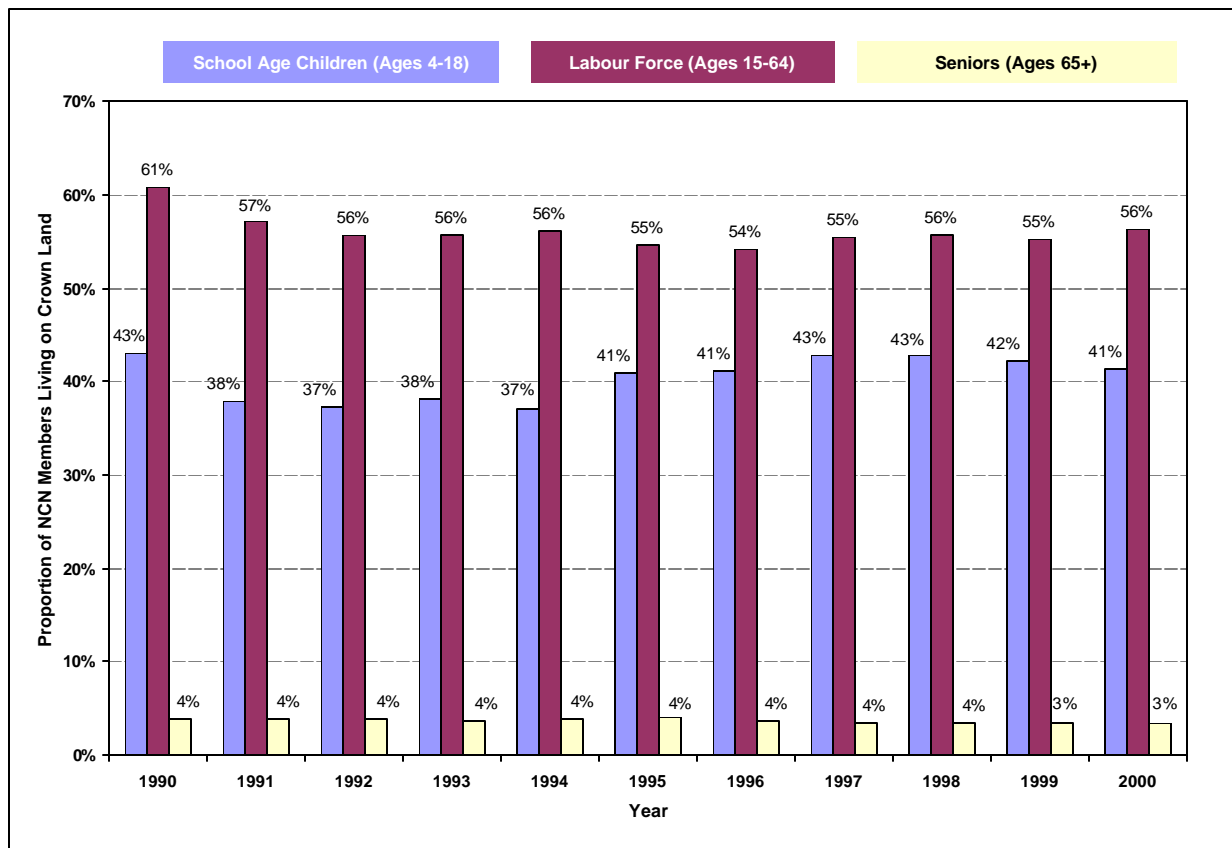
1. Population data for 2000 NCN population from INAC records. INAC records are based on membership data collected by the NCN Membership Clerk in Nelson House and forwarded to INAC each year.
2. Manitoba Health Population Report, June 1, 2000 (used for 2000 Manitoba population distribution).

Note:

1. The above charts show the proportion of NCN members in each age category living on Crown land, as well as the proportion of the Manitoba population in each age category.

Figure 2.9 below outlines how the proportion of school-aged, labour force and senior populations of NCN members living on Crown land changed from 1990 to 2000. Based on this figure, the proportions of the NCN population living on Crown land that are of school-age, within the labour force or a senior changed very little from 1990 to 2000. This is different than the trends on-reserve, where the proportion of school-age children increased and the proportion of labour force residents and seniors decreased over the ten-year period.

Figure 2.9
Changing Proportion of School-age Children, those of Labour Force Age and Seniors
Among NCN Members Living On Crown Land from 1990 to 2000



Source:

1. Population data for 1990 to 2000 from INAC records. INAC records are based on membership data collected by the NCN Membership Clerk in Nelson House and forwarded to INAC each year.

Notes:

1. Crown land populations include members living on own band Crown land, on other band Crown land and on non-band Crown land. Between 1990 and 2000 all NCN members living on Crown land lived on non-band Crown land, with the exception of 1994 and 1995 when 12 members lived on own band Crown land. It is likely that most of the members living on non-band Crown land reside at South Indian Lake.
2. Totals do not add to 100% because of overlap in age between the population categories of school-age children (ages 4 to 18) and those of labour force age (ages 15 to 64).

2.1.1.3 Birth Rates On-Reserve

Birth rates were measured as the number of births per thousand people in the population. Accurate data for calculating birth rates were available from Health Canada, First Nations & Inuit Health Branch for the populations at Nelson House and South Indian Lake. [Table 2.7](#) and [Figure 2.10](#) below indicate that, in general, birth rates among NCN members living in Nelson House and South Indian Lake tended to be lower than those seen among both Manitoba's on-reserve First Nation population and the provincial First Nation population as a whole. Birth rates among members living in Nelson House and South Indian Lake averaged approximately 26 births per thousand in the population over the ten-year time period from 1990 to 1999. Birth rates in these two communities reached a high in 1994 at over 30 births per thousand, but have seen a decrease since this time. Between 1990 and 1999, on-reserve birth rates for Manitoba First Nations as a whole averaged about 29 births per thousand in the population, while those in the provincial First Nation population averaged about 32 births per thousand.

Table 2.7
Birth Rates among NCN Members Resident in Nelson House and South Indian Lake,
Manitoba's On-Reserve First Nation Population and
Manitoba's Total First Nation Population: 1990 to 1999

Year	Birth Rates (<i>Births per thousand</i>)		
	Nelson House & South Indian Lake ^{1,2}	Manitoba First Nations On-Reserve ^{3,4}	Manitoba First Nations On- and Off-Reserve ^{5,6}
1990	26.8	34.6	32.5
1991	26.6	30.6	33.1
1992	23.1	29.0	33.6
1993	27.9	31.8	34.0
1994	33.8	31.4	33.7
1995	26.5	28.2	31.8
1996	24.4	27.8	30.6
1997	25.0	27.2	28.8
1998	22.2	26.4	30.0
1999	23.5	25.1	29.1
Average	25.8	28.9	31.5

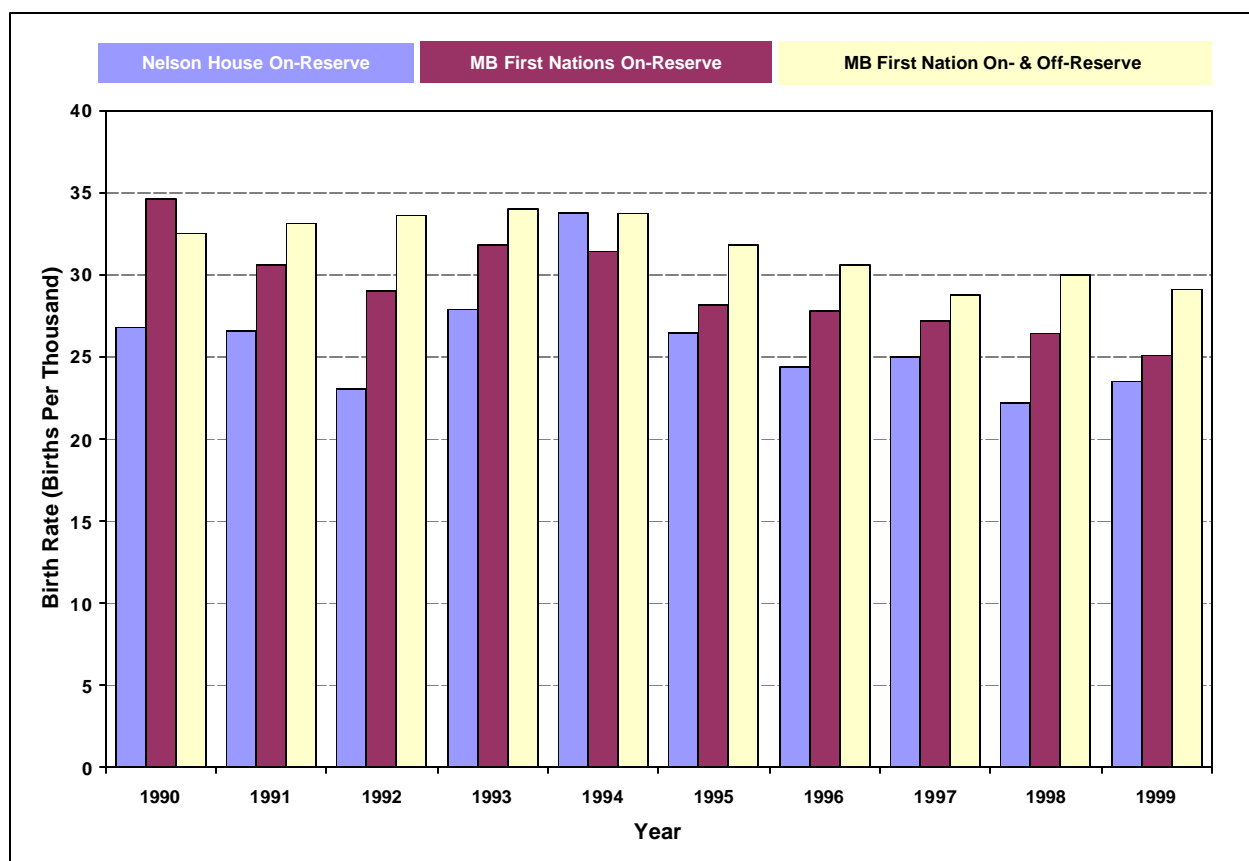
Sources:

1. Health Canada, 2001. Number of births in Nelson House and South Indian Lake for 1990 to 1999.
2. Population data for 1990 to 1999 for Nelson House from INAC. INAC records are based on membership data collected by the NCN Membership Clerk in Nelson House and forwarded to INAC each year.
3. Health Canada, 2001. Number of births for Manitoba First Nations on-reserve from 1990 to 1999.
4. Health Canada, 2001. Population Report for Manitoba First Nations On-Reserve Population from 1990 to 2001.
5. Health Canada, 2001. Number of births for Manitoba First Nations on-and off-reserve from 1990 to 1999.
6. Health Canada, 2001. Population Report for Manitoba First Nations On- and Off-Reserve Population from 1990 to 2001.

Note:

1. Births per thousand were determined by dividing the total number of births in each year by the population.

Figure 2.10
Births Per Thousand in the Population for NCN Members Living in Nelson House and South Indian Lake Compared to Manitoba's On-Reserve First Nation Population and the Provincial Population: 1990 to 1999



Sources:

- 1 - Health Canada, 2001. Number of births in Nelson House and South Indian Lake for 1990 to 1999.
- 2 - Population data for 1990 to 1999 for Nelson House from INAC. INAC records are based on membership data collected by the NCN Membership Clerk in Nelson House and forwarded to INAC each year.
- 3 - Health Canada, 2001. Number of births for Manitoba First Nations on-reserve from 1990 to 1999.
- 4 - Health Canada, 2001. Population Report for Manitoba First Nations On-Reserve Population from 1990 to 2001.
- 5 - Health Canada, 2001. Number of births for Manitoba First Nations on-and off-reserve from 1990 to 1999.
- 6 - Health Canada, 2001. Population Report for Manitoba First Nations On- and Off-Reserve Population from 1990 to 2001.

Note:

- 1 - Births per thousand were determined by dividing the total number of births in each year by the population.

2.1.1.4 Mortality Rates On-Reserve

Like birth rates, mortality rates were measured as the number of deaths per thousand people in the population. Data for mortality rates were only available for the NCN populations living in Nelson House and South Indian Lake. [Table 2.8](#) and [Figure 2.11](#) below show average mortality rates for these NCN populations, compared to Manitoba's on-reserve First Nation population and the provincial First Nation population living on- and off-reserve, for five year intervals between 1990 to 1999. During this time period, the average annual mortality rate among residents of Nelson House and South Indian Lake was

5.4 deaths per 1,000 residents. This was lower than the Manitoba First Nations on-reserve rate of 5.5 per 1,000, but higher than the rate for First Nations living on- and off-reserve in Manitoba (4.9 per,1000).

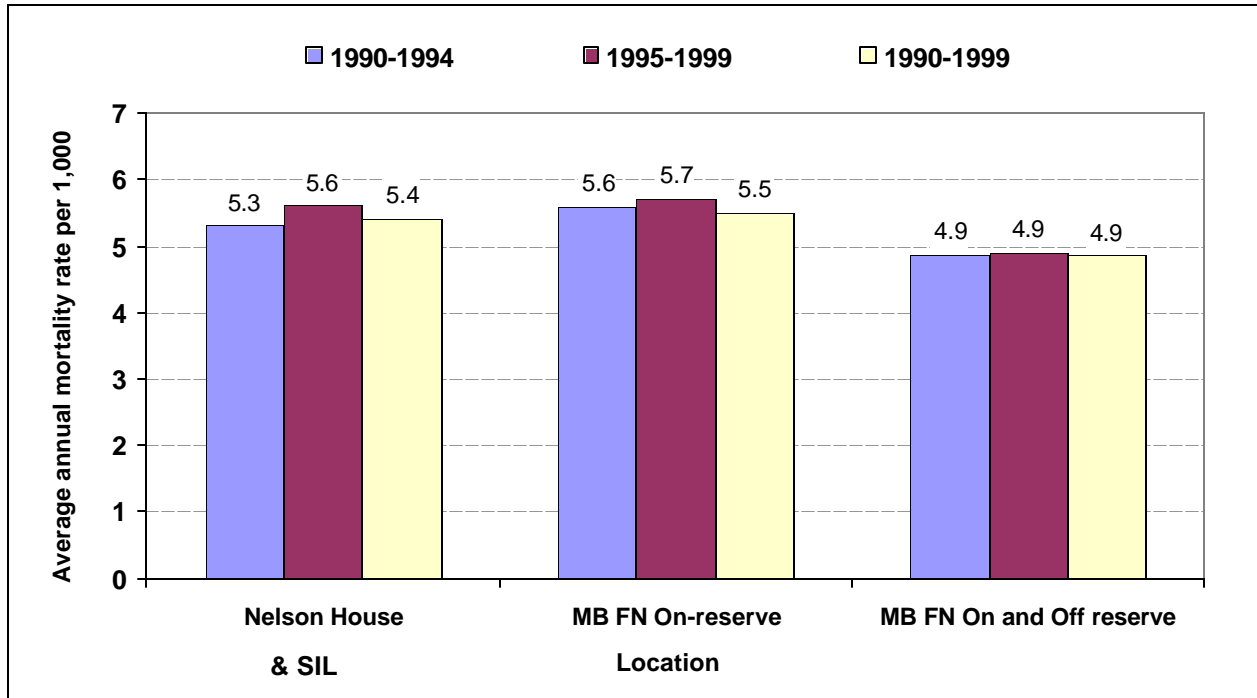
Table 2.8
Death Rates among NCN Members in Nelson House and South Indian Lake, Manitoba's On-Reserve First Nation Population and the Provincial Population: 1990 to 1999

Year	Death Rates (<i>Deaths per thousand</i>)		
	Nelson House & South Indian Lake ^{1,2}	Manitoba First Nations On-Reserve ^{3,4}	Manitoba First Nations On-Reserve ^{4,5}
1990 to 1994	5.3	5.6	4.9
1995 to 1999	5.6	5.7	4.9
Average: 1990 to 1999	5.4	5.5	4.9

Sources:

1. Health Canada, 2001. Number of deaths in Nelson House and South Indian Lake for 1990 to 1999.
2. Population data for 1990 to 1999 for Nelson House from INAC records. INAC records are based on membership data collected by the NCN Membership Clerk in Nelson House and forwarded to INAC each year.
3. Health Canada, 2001. Number of deaths for Manitoba's on-reserve First Nations population from 1990 to 1999.
4. Health Canada, 2001. Population Report for Manitoba First Nations On-Reserve and Off-Reserve Population from 1990 to 2001.
5. Health Canada, 2001. Number of deaths for Manitoba's on-reserve and off-reserve First Nations population from 1990 to 1999.

Figure 2.11
Deaths Per Thousand in the On-Reserve Population at Nelson House compared to Manitoba's First Nation Population and the Provincial First Nations Population: 1990 to 1999



Sources:

- 1 - Health Canada, 2001. Number of deaths in Nelson House and South Indian Lake for 1990 to 1999.
- 2 - Population data for 1990 to 1999 for Nelson House from INAC records. INAC records are based on membership data collected by the NCN Membership Clerk in Nelson House and forwarded to INAC each year.
- 3 - Health Canada, 2001. Number of deaths for Manitoba's on-reserve First Nations population from 1990 to 1999.
- 4 - Health Canada, 2001. Population Report for Manitoba First Nations On-Reserve and Off-Reserve Population from 1990 to 2001.
- 5 - Health Canada, 2001. Number of deaths for Manitoba's on-reserve and off-reserve First Nations population from 1990 to 1999.

2.1.1.5 Projected On-Reserve, Off-Reserve & Crown Land Populations

Population projections for NCN were developed for the years 2001 to 2011. They were calculated using population data from INAC, as well as growth trends seen in the NCN population from 1990 to 2000.

The INAC data provided included the following:

- **Population:** On-reserve, off-reserve and Crown land NCN populations by age and sex for the years 1990 to 2000, as presented in the previous sections.
- **Fertility Rates:** Current and projected fertility rates by age of First Nation females between the ages of 15 and 44 living on- and off-reserve in Manitoba. Fertility rates were provided for the years 2000 to 2008. The fertility rates for 2009 to 2011 were projected based on the trends seen in the 2000 to 2008 data.
- **Survival Rates:** Current and projected survival rates for the Registered Indian Population living on- and off-reserve in Manitoba between the ages of 0 and 85 or greater, categorized by age and sex, for the 2000 to 2008 time period. Survival rates for the years 2009 to 2011 were estimated based on the trends seen from 2000 to 2008.
- **Bill C-31 Reinstatements:** Projected Bill C-31 reinstatements for Manitoba's First Nation population for the years 2000 to 2008. Bill C-31 reinstatements for 2009 to 2011 were estimated based on the trends seen in the 2000 to 2008 data.
- **Status Inheritance:** Status inheritance trends (based on Bill C-31 regulations) among Manitoba's on- and off-reserve First Nation populations for the years 1997 to 2032.
- **Migration Rates:** Projected intra-provincial migration rates for Manitoba's Registered Indian Population for the years 2000 to 2008.

Using these data, three projection scenarios were developed representing low, medium and high population growth:

Low Growth Scenario: All of the data provided by INAC were used to develop the low growth scenario. It assumed a slowly declining fertility rate throughout the eleven-year period, as well as slowly increasing survival rates (decreased mortality rates). The projected on-reserve, off-reserve and Crown land populations under this scenario were calculated by determining:

- The number of children under the age of one who are NCN members (based on the number of females between the ages of 15 and 44 and their fertility rates and estimates of status inheritance).
- The number of members between the ages one and 85 or greater (based on the age-specific survival rates from year to year).
- Estimates of the number of Bill C-31 reinstatements. Bill C-31 reinstatements were estimated by using the proportion of the Manitoba First Nation population that were NCN members in 1998 – approximately three percent of Manitoba's on-reserve First Nation population and three per cent of its off-reserve population in 1998².

² The year 1998 was chosen because accurate data were available for both the provincial and NCN First Nation populations on- and off-reserve. It was also the year on which projected fertility rates, survival rates, and Bill C-31 reinstatements were based.

- Estimates about the amount of migration from on- to off-reserve. INAC data for Manitoba First Nations and NCN experience indicate that projected migration on- and off-reserve is estimated to be fairly balanced between 2001 to 2011. That is, while members are migrating off-reserve, fairly equal numbers of members are returning to live on-reserve. Experience at NCN from 1990 to 2000 indicates that the ratio of on- to off-reserve members has remained fairly constant in recent history.

Medium Growth Scenario: NCN experience between 1990 and 2000 and the above-noted INAC data were both used to develop the medium growth scenario. This scenario assumed a slowly declining annual growth rate during each year from 2001 to 2011. This approach was used because the projected populations under the low growth scenarios were nearly half the annual population growth rate seen between 1990 and 2000. The projected populations under this scenario were determined as follows:

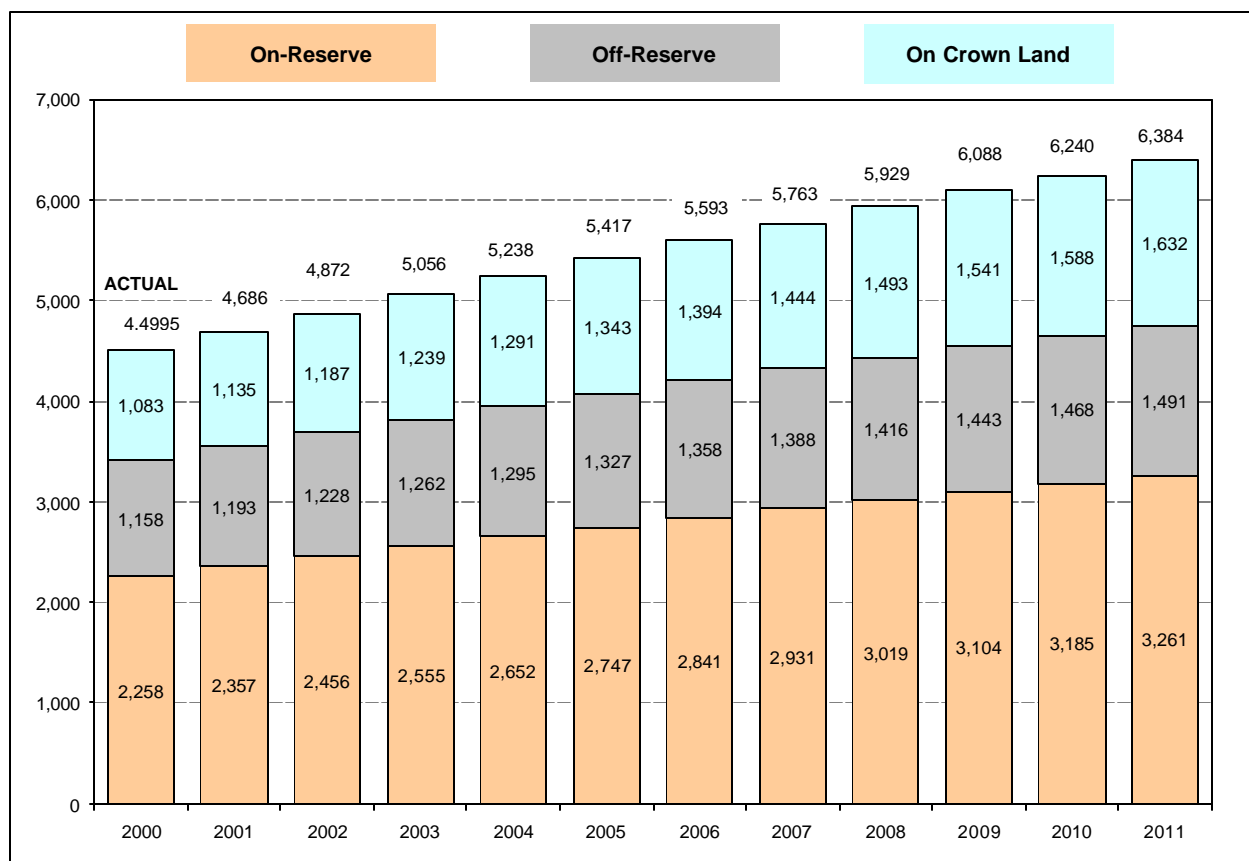
- The annual population growth rate between 1990 and 2000 was determined for on-reserve, off-reserve and Crown land populations based on INAC population.
- It was assumed that between the 2001 and 2011, the annual growth rate seen in the previous ten years would decrease to the annual growth rate predicted in the low growth scenario.

High Growth Scenario: The high growth scenario was developed by assuming that the annual average growth rate seen from 1990 to 2000 continued to be seen during the ten-year time period from 2001 to 2011.

Based on the above, the total NCN membership is projected to grow from 4,449 members in 2000 to between 5,808 and 7,150 members by 2011, excluding Bill C-31 reinstatements. This represents an annual growth rate of between 2.4 and 4.3 per cent in this twelve-year time period. Approximately 52 Bill C-31 reinstatements of NCN members are projected between 2000 and 2011 – 15 on-reserve and 37 off-reserve.

[Figure 2.12](#) below shows projected population changes for on-reserve, off-reserve and Crown land NCN populations from 2001 to 2011 under the medium growth scenario. Further details on these projections are provided below.

Figure 2.12
Projected NCN Population On-Reserve, Off-Reserve and
On Crown Land Using a Medium Growth Scenario: 2001 to 2011



Sources:

1. INAC population data for 2000, as well the time period from 1990 to 2000.
2. INAC, 2001 projected fertility rates, survival rates and status inheritance rates for on- and off-reserve First Nation populations in Manitoba for 2001 to 2008. Similar rates for 2009 to 2011 were estimated based on trends seen in the 2000 to 2008 time period.

Notes:

1. Excludes Bill C-31 Reinstatements. Between 2001 and 2011 approximately 52 Bill C-31 Reinstatements are projected – 15 on-reserve and 37 off-reserve.
2. Off-reserve population includes members living on another reserve.

2.1.1.5.1 Projected On-Reserve Population

Table 2.9 below outlines the projected on-reserve population based on the low, medium and high growth scenarios. Based on these scenarios, on-reserve population in 2011 is expected to be between 2,969 and 3,687 persons by the year 2011. This excludes Bill C-31 reinstatements, of which there are projected to be approximately 15 on-reserve between 2001 and 2011.

The projected increase to between 2,969 and 3,687 people represents an annual growth rate from 2000 to 2011 of between 2.6 and 4.6 per cent, with a medium growth rate of 3.4 per cent. This is within the projected Manitoba on-reserve growth rate of 3.3 per cent between 1998 and 2008 predicted in a 2000 INAC projection study (INAC 2000).

Table 2.9
Projected On-Reserve Population at Nelson House
Using Low, Medium and High Growth Rate Scenarios: 2000 to 2011

Year	Low Growth Scenario	Medium Growth Scenario	High Growth Scenario
2000 ACTUAL	2,258	2,258	2,258
2001	2,312	2,357	2,361
2002	2,373	2,456	2,469
2003	2,432	2,555	2,581
2004	2,494	2,652	2,699
2005	2,555	2,747	2,822
2006	2,619	2,841	2,950
2007	2,685	2,931	3,085
2008	2,748	3,019	3,225
2009	2,817	3,104	3,372
2010	2,891	3,185	3,526
2011	2,969	3,261	3,687

Sources:

1. INAC population data for 2000, as well as INAC population data for 1990 to 2000.
2. INAC, 2001 projected fertility rates, survival rates and status inheritance rates for on-reserve First Nation populations in Manitoba for 2001 to 2008. Similar rates for 2009 to 2011 were estimated based on trends seen in the 2000 to 2008 time period.

Notes:

1. Excludes Bill C-31 Reinstatements. Between 2001 and 2011 approximately 15 Bill C-31 Reinstatements are projected for on-reserve NCN members.

2.1.1.5.2 Projected Off-Reserve Population

As with the on-reserve population, the projected off-reserve population of NCN members was calculated using relevant population data from INAC and low, medium and high growth scenarios. The results of these calculations are presented in [Table 2.10](#) below. They indicate that the projected off-reserve population is expected to be between 1,375 and 1,629 members by 2011. This represents an annual growth rate off-reserve of between 1.6 and 3.2 per cent, with a medium growth of rate of 2.4 per cent, over the twelve-year time period from 2000 to 2011. This is less than the projected annual on-reserve growth rate of between 2.6 and 4.6 per cent.

The projected off-reserve population for 2011 does not include Bill C-31 Reinstatements. It is projected that between 2001 and 2011 there will be 37 Bill C-31 Reinstatements.

Table 2.10
Projected Off-Reserve Population of NCN Members
Using Low, Medium and High Growth Scenarios: 2000 to 2011

Year	Low Growth Scenario	Medium Growth Scenario	High Growth Scenario
2000 ACTUAL	1,158	1,158	1,158
2001	1,181	1,193	1,195
2002	1,204	1,228	1,232
2003	1,225	1,262	1,271
2004	1,246	1,295	1,311
2005	1,266	1,327	1,352
2006	1,286	1,358	1,395
2007	1,306	1,388	1,439
2008	1,323	1,416	1,484
2009	1,340	1,443	1,531
2010	1,357	1,468	1,579
2011	1,375	1,491	1,629

Sources:

1. INAC population data for 2000.
2. INAC, 2001 projected fertility rates, survival rates and status inheritance rates for off-reserve First Nation populations in Manitoba for 2001 to 2008. Similar rates were estimated for 2009 to 2011 based on trends seen in the 2000 to 2008 time period.

Note:

1. Excludes Bill C-31 Reinstatements. Between 2001 and 2011 approximately 37 Bill C-31 Reinstatements are projected for off-reserve NCN members.

2.1.1.5.3 Projected Crown Land Population

The projected population of members living on Crown land, primarily at South Indian Lake and the Northern Affairs Community of Nelson House, was calculated using the INAC fertility and survival rates provided for on-reserve First Nation populations in Manitoba. On-reserve rates were used because rates for Crown land populations were not available. The three growth scenarios were employed and the results are seen in [Table 2.11](#) below. By 2011, the projected population of NCN members living on Crown land is expected to be between 1,470 and 1,855. This represents an annual growth rate of between 2.8 and 5.0 per cent, with a medium growth rate of 3.8 per cent.

Table 2.11
Projected Population of NCN Members Living on Crown Land
Using Low, Medium and High Growth Scenarios: 2000 to 2011

Year	Low Growth Scenario	Medium Growth Scenario	High Growth Scenario
2000 ACTUAL	1,083	1,083	1,083
2001	1,110	1,135	1,137
2002	1,143	1,187	1,194
2003	1,176	1,239	1,254
2004	1,208	1,291	1,317
2005	1,243	1,343	1,383
2006	1,278	1,394	1,452
2007	1,315	1,444	1,525
2008	1,351	1,493	1,602
2009	1,389	1,541	1,682
2010	1,429	1,588	1,766
2011	1,469	1,632	1,855

Sources:

1. INAC population data for 2000.
2. INAC, 2001 projected fertility rates, survival rates and status inheritance rates for on-reserve First Nation populations in Manitoba for 2001 to 2008. Similar rates for 2009 to 2011 were estimated based on trends seen in the 2000 to 2008 time period.

Note:

1. Excludes Bill C-31 reinstatements for NCN members living on Crown land. No data were available to project the number of Bill C-31 reinstatements that may occur among NCN members living on Crown land during the 2001 to 2011 time period.

2.1.2 Nelson House Northern Affairs Community

Population statistics for the Northern Affairs Community of Nelson House were available from the 1998 Manitoba Northern Affairs Community Profiles. Based on these data, the community had a total population of 77 people in 1996. Discussions with community members indicate that the majority (greater than 90 per cent) of residents in this Northern Affairs community are also NCN members.

2.1.3 South Indian Lake Northern Affairs Community

Population statistics for the Northern Affairs Community of South Indian Lake were available from the 1998 Manitoba Northern Affairs Community Profiles. Based on these data, the community had a total population of 887 people in 1996. It should be noted that a large majority of South Indian Lake residents are also members of the Nisichawayasihk Cree Nation (NCN). Indian and Northern Affairs Canada (INAC)

data indicate that in 2000, 1,083 NCN members lived on Crown Land. It is likely that the majority of these members lived in South Indian Lake (INAC 2000).

2.1.3.1 Population Structure by Age and Sex

Table 2.12 below indicates that South Indian Lake had a very young population in 1996. According to 1996 Census of Canada data, approximately 42 per cent of the population was under 15 years of age. The provincial average in 1996 was only 22 per cent. In addition, almost 72 per cent of the population in South Indian Lake was under 30 years of age. Very few elderly people lived in the community, with only about 3 per cent of the population over 60 years of age in 1996 (Statistics Canada 1996).

Table 2.12
Age and sex distribution for South Indian Lake: 1996

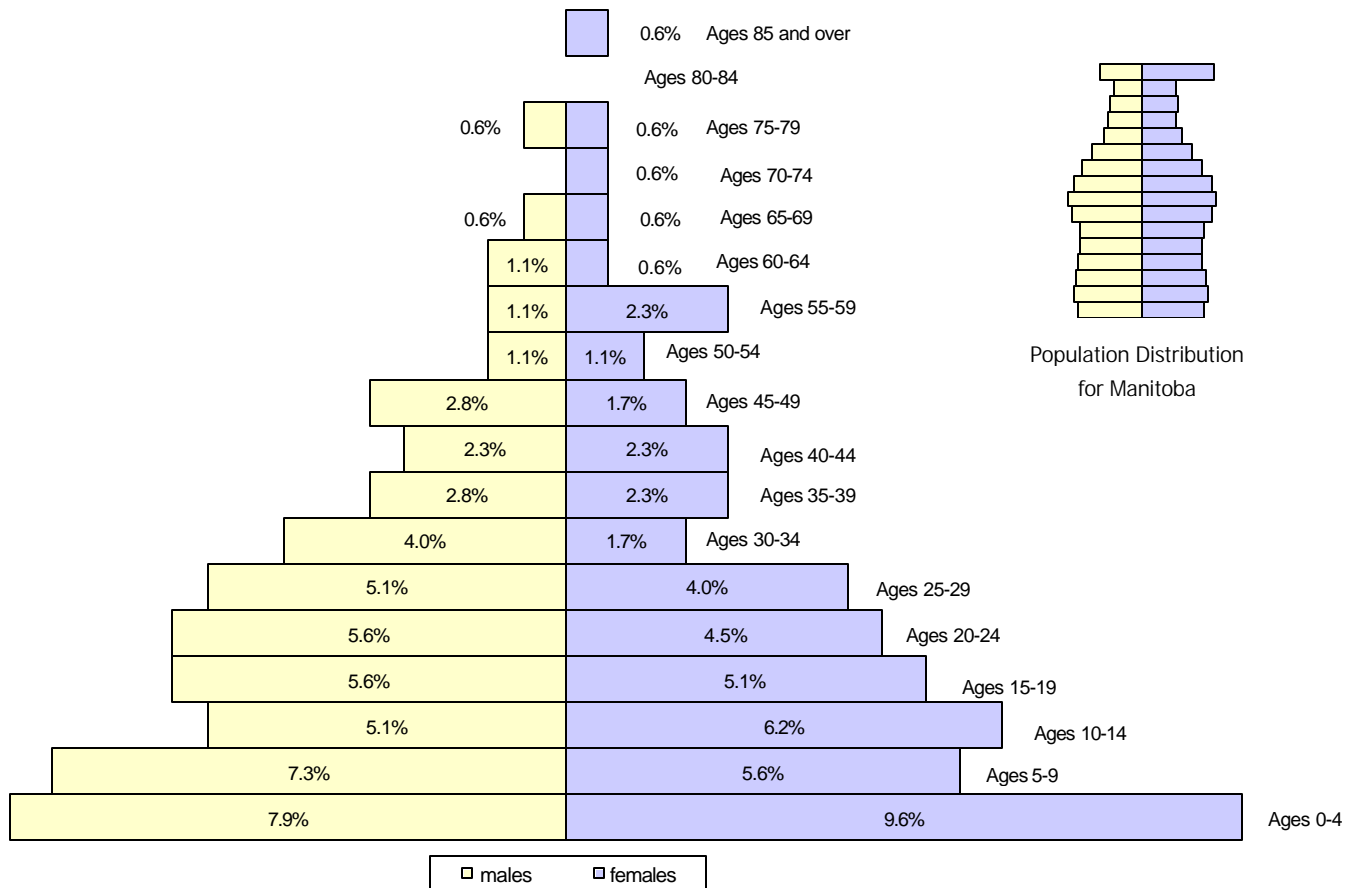
Characteristics	South Indian Lake		
	Total (number and % of total population)	Male (number and % of total population)	Female (number and % of total population)
Total Aboriginal Population	845	445	400
Age Characteristics of the Total Population:			
Total – All persons	885	465	420
Age 0-4	155 (17.5%)	70 (7.9%)	85 (9.6%)
Age 5-9	115 (13.0%)	65 (7.3%)	50 (5.6%)
Age 10-14	100 (11.3%)	45 (5.1%)	55 (6.2%)
Age 15-19	95 (10.7%)	50 (5.6%)	45 (5.1%)
Age 20-24	90 (10.2%)	50 (5.6%)	40 (4.5%)
Age 25-29	80 (9.0%)	45 (5.1%)	35 (4.0%)
Age 30-34	40 (4.5%)	35 (4.0%)	15 (1.7%)
Age 35-39	45 (5.1%)	25 (2.8%)	20 (2.3%)
Age 40-44	40 (4.5%)	20 (2.3%)	20 (2.3%)
Age 45-49	40 (4.5%)	25 (2.8%)	15 (1.7%)
Age 50-54	20 (2.3%)	10 (1.1%)	10 (1.1%)
Age 55-59	30 (3.4%)	10 (1.1%)	20 (2.3%)
Age 60-64	15 (1.7%)	10 (1.1%)	5 (0.6%)
Age 65-69	10 (1.1%)	5 (0.6%)	5 (0.6%)
Age 70-74	5 (0.6%)	0	5 (0.6%)
Age 75-79	10 (1.1%)	5 (0.6%)	5 (0.6%)
Age 80-84	0	0	0
Age 85 and over	5 (0.6%)	0	5 (0.6%)
Number of individuals ages 15 and over	515	285	245
Per cent of the total population ages 15 and over	58.2	32.2	27.7

Source: Statistics Canada 1996 Census of Canada – 100% Data

Note: Column total may not add due to rounding.

Figure 2.13 demonstrates the age and sex distribution of the South Indian Lake population based on the data in Table 2.12 above. The population distribution of Manitoba is also provided for comparison's sake.

Figure 2.13
Population Distribution by Age and Sex for South Indian Lake: 1996



Source: Statistics Canada 1996 Census of Canada – 100% Data

2.2 ECONOMY

2.2.1 Employment, Training & Income

Employment, training and income data were only available for the reserve community of Nelson House and the Northern Affairs community of South Indian Lake, primarily from Statistics Canada. Statistics Canada data are from the 1991 and 1996 Census of Canada and, for the most part, are based on a 20 per cent sample and are limited by this small sample size. Data for Nelson House and South Indian Lake are presented separately.

2.2.1.1 Nelson House

2.2.1.1.1 Labour Force Characteristics

Potential Labour Force

Statistics Canada place the 1996 potential labour force at 1,070 individuals in Nelson House. According to INAC population data, in Nelson House, the potential labour force³ (residents between 15 and 64 years of age) in 1990 was approximately 922 people – 484 males and 438 females. By 2000, this value had increased to 1,247 individuals - 659 males and 588 females, representing a 3.1 per cent annual growth rate.

Active Labour Force

The active labour force is defined by Statistics Canada as the number of people in the total labour force who were either employed or unemployed⁴ during the week prior to the Census Day. Typically, those persons not considered to be part of the active labour force include students, homemakers, retired workers, seasonal workers in an “off-season” who are not looking for work and persons who can not work because of a long-term disability or illness (Statistics Canada 1996).

For this study, active labour force was calculated by determining the participation rate of Nelson House and South Indian Lake residents in the labour force and then multiplying this value by the number of people in the potential labour force. The participation rate is the percentage of the potential labour force that is currently employed or unemployed and actively looking for work. It is calculated as the total active labour force divided by the potential labour force.

For Nelson House, participation rates were calculated using the 1991 and 1996 Census of Canada and are outlined in [Table 2.13](#) below.

³ For the purposes of this study, potential labour force is defined as all persons between the ages of 15 and 64 since it is reasonable that persons in this age group would be the most likely to participate in the labour force. The potential labour force is defined by Statistics Canada, however, as all person ages 15 years and over, excluding institutional residents.

⁴ Unemployed persons are considered to be those who were without paid work during the week prior to the Census, but either actively looked for work in the four weeks prior to the Census, were on temporary lay-off and were expected to return their job, or had definite arrangements to start work within four weeks after the time of the Census.

Table 2.13
Participation Rate in Nelson House (1991, 1996) and Manitoba (1996)

Data Source	Participation Rate		
	Total	Male	Female
Statistics Canada 1991 ^{1,2}	39.7%	46.9%	32.0%
Statistics Canada 1996 ^{1,2}	43.5%	48.7%	38.6%
Manitoba Participation Rate – 1996	65.5%	72.7%	58.6%

Notes:

1. Only 20% sample data.
2. Based on entire population at Nelson House (i.e. includes some non-NCN members) ages 15 and older.

Based on the Statistics Canada participation data outlined above, Table 2.14 below indicates the active labour force in 1990 and 1996 for the community.

Table 2.14
Active Labour Force in Nelson House: 1991 and 1996

Year	Total Active Labour Force ^{1,2}		
	Total	Male	Female
1991 ^{1,2,3}	375	234	143
1996 ^{1,2,3}	486	292	200

Sources:

1. Statistics Canada Participation Rates
2. Population data for 1991 and 1996 from INAC records. INAC records are based on membership data collected by the NCN Membership Clerk in Nelson House and forwarded to INAC each year.

Notes:

1. Statistics Canada participation rates are based on only 20% sample data and the entire population at Nelson House (i.e. includes some non-NCN members) ages 15 and older.
2. The total active labour force was calculated using the population of NCN members between the ages of 15 and 64, based on INAC population data.
3. Numbers may not add due to rounding.

Projected Labour Force

The projected future labour force for on-reserve NCN members can be determined using the population projections presented in section 2.1.1.5. Using these projections, the projected on-reserve potential labour force (those between the ages of 15 and 64) for each year from 2000 to 2011, under low, medium and high growth scenarios, is presented in Table 2.15. Based on these data, the projected potential labour force is between 1,800 and 2,045 members by 2011. This represents a growth in the potential labour force of between 3.4 per cent and 4.6 per cent during the 12-year time period from 2000 to 2011.

Table 2.15
Projected On-Reserve Potential Labour Force of NCN Members
Using Low, Medium and High Growth Scenarios: 2000 to 2011

Year	Low Growth Scenario	Medium Growth Scenario	High Growth Scenario
2000 ACTUAL	1,247	1,247	1,247
2001	1,281	1,302	1,304
2002	1,303	1,357	1,364
2003	1,350	1,411	1,427
2004	1,401	1,464	1,493
2005	1,446	1,517	1,561
2006	1,492	1,569	1,633
2007	1,562	1,619	1,708
2008	1,622	1,667	1,787
2009	1,691	1,714	1,869
2010	1,747	1,759	1,955
2011	1,800	1,801	2,045

Sources:

1. INAC population data for 2000.
2. INAC, 2001 projected fertility rates, survival rates and status inheritance rates for on-reserve First Nation populations in Manitoba for 2001 to 2008. Similar rates were estimated for 2009 to 2011 based on trends seen in the 2000 to 2008 time period.

Note:

1. Excludes Bill C-31 Reinstatements. Between 2001 and 2011 approximately 15 Bill C-31 Reinstatements are projected for on-reserve NCN members.

The projected active labour force was calculated using Statistics Canada data for 1991 and 1996 and the projected potential labour force for 2000 to 2011. Statistics Canada data for 1991 and 1996 indicate that for every 9 members added to the potential labour force, approximately 5 of these members became part of the active labour force. Assuming this ratio remains the same, the active labour force for the years 2000 to 2011 was estimated by determining the number of new members added to the potential labour force each year and, from there, extrapolating the number that would become part of the active labour force.

Table 2.16 below indicates the projected active labour force for NCN members on-reserve for the years 2000 to 2011 using the methodology cited and the low, medium and high growth projection scenarios. The results indicate that NCN's active labour force on-reserve is estimated to increase from approximately 569 members in 2000 to between 925 and 1,082 members in 2011. This means that by 2011, the projected participation rate for NCN members living on-reserve is estimated to be between 51 and 53 per cent.

Table 2.16
Projected On-Reserve Active Labour Force of NCN Members
Using Low, Medium and High Growth Scenarios: 2000 to 2011

Year	Low Growth Scenario	Medium Growth Scenario	High Growth Scenario
2000	569	569	569
2001	591	605	606
2002	605	640	644
2003	635	675	685
2004	668	709	727
2005	697	743	771
2006	727	776	817
2007	772	808	865
2008	810	839	916
2009	855	869	969
2010	891	898	1,024
2011	925	925	1,082

Sources:

1. INAC population data for 2000.
2. INAC, 2001 projected fertility rates, survival rates and status inheritance rates for on-reserve First Nation populations in Manitoba for 2001 to 2008. Similar rates were estimated for 2009 to 2011 based on trends seen in the 2000 to 2008 time period.

Note:

1. Excludes Bill C-31 Reinstatements. Between 2001 and 2011 approximately 15 Bill C-31 Reinstatements are projected for on-reserve NCN members.

Employment

Employment at Nelson House was calculated using the 1991 and 1996 Census of Canada and the 2000 NCN Opinion Survey – Total Sample. The latter were used to provide an indication of current employment trends in Nelson House. Each of these data sources have limitations which should be noted when reviewing the results:

- The 1991 and 1996 Census of Canada is based on a 20 per cent sample of community residents. This makes them limited by a small sample size.
- The 2000 NCN Opinion Survey was carried out from May to July of 2000 in Nelson House. It was undertaken in the context of future hydro-electric development and this may have biased the answers received. It also did not specifically ask respondents whether they were in the active labour force, and was carried out with an age cut-off of 16, rather than 15 years of age.

Due to these limitations, the data were supplemented with an informal survey of the following 21 main employers in Nelson House in 2001 to determine the number of NCN members they employ:

- NCN Government Office
- NCN Trust Office
- Country Foods
- NCN Fire Department
- Fannie Hart Medical Centre
- Nelson House Development Corporation
- Notigi
- Meetah
- Northern Store
- Otetiskiwin Kiskinwamahtowekamik School
- Family and Community Wellness Centre
- Footprint Engineering
- NCN Police
- Future Development Office
- NCN Recreation
- NCN Housing Authority
- Nelson House Forest Industries
- Family Foods
- Otohowin Gas
- Gilbert McDonald Arena
- NCN Communications Corporation

Employment Rate

According to the 1991 Census of Canada, 220 (120 males and 100 females) of the 310 people (82%) in the active labour force were employed. Data from the 1996 Census of Canada indicated that 250 (125 males and 130 females⁵) of the 465 people (54%) in the active labour force at Nelson House were employed. It is likely that the results from the 1991 Census of Canada indicate such higher employment rates, and lower unemployment rates, because of the relatively small active labour force reported in 1991 (i.e., lower participation rates).

The 2000 NCN Opinion Survey – Total Sample indicated that, of the 742 people in the potential labour force who commented on their employment status, 202 people (27%) said there were employed full-time and 142 people (19%) said there were employed part-time or seasonally, for a total of employment rate of 46 per cent. This is within 10 per cent of the 1996 Census of Canada results.

Based on the above results, which are also presented in [Table 2.17](#) below, a reasonable estimate of the employment rate for Nelson House at present would be between 45 and 55 per cent.

⁵ Numbers do not add due to rounding done by Statistics Canada

Table 2.17
Employment Rate of NCN Members Living in Nelson House (1991, 1996 and 2000)
and of the Provincial Population (1996)

Data Source	Employment Rate		
	Overall	Male	Female
Statistics Canada (1991) ^{1,2}	82.3%	81.6%	83.3%
Statistics Canada (1996) ^{1,2}	53.7%	45.5%	69.2%
NCN Opinion Survey – Total Household Sample (2000) ³	46.4%	45.9%	39.1%
Provincial Employment Rate – 1996 Census of Canada	92.1%	91.5%	92.9%

Notes:

1. Only 20% sample data.
2. Based on entire population at Nelson House (i.e. includes some non-NCN members) ages 15 and older.
3. Includes members ages 16 and over (rather than those ages 15 to 64).

Employment by age was also determined using the 2000 NCN Opinion Survey – Total Sample. The results, seen in the table below, should be viewed with caution given the data limitations previously mentioned.

Table 2.18
Employment Rate of NCN Members Living in Nelson House by Age: 2000

Age Category	Employment Rate		
	NCN Opinion Survey (2000) ^{1,2}		
	Total	Full-time	Part-time or Seasonal
15-19	16%	4%	6%
20-24	36%	15%	18%
25-29	50%	30%	19%
30-34	50%	30%	19%
35-39	59%	36%	14%
40-44	53%	31%	11%
45-49	53%	50%	0.7%
50-54	55%	40%	4%
55-59	53%	25%	6%
60-64	25%	18%	1%
Average	46.4%	27.2%	19.1%

Notes:

1. Includes members ages 16 to 65 (rather than those ages 15 to 64).
2. Based on the total potential labour force as no distinction made of those actively looking for work.

Employment by Sector

The 1996 Census of Canada was used to calculate employment by industry division, according to the *1980 Standard Industrial Classification Structure for Canada* for residents of the Nelson House reserve community, as compared to the provincial population. The results outlined in the table below indicate that Government Services, Education Services and Health and Social Services are the largest sources of employment in Nelson House, accounting for 60 to 65 per cent of employment.

Table 2.19
Employment by Industry Type for NCN Members Living in Nelson House
as Compared to the Provincial Population: 1996

Industry Division	Nelson House - 1996 -	Manitoba - 1996 -
<i>Total – All industries</i>	<i>335 people</i>	<i>553,875 people</i>
Agricultural and related service industries	0%	7.2%
Fishing and Trapping Industries	0%	0.2%
Logging and forestry industries	7.5%	0.4%
Mining (including milling), quarrying and oil well industries	0%	0.8%
Manufacturing industries	0%	11.3%
Construction industries	9.0%	4.9%
Transportation and storage industries	4.5%	5.5%
Communication and other utility industries	4.5%	3.6%
Wholesale trade industries	0%	4.9%
Retail trade industries	7.5%	11.6%
Finance and insurance industries	0%	3.2%
Real estate operator and insurance agent industries	3.0%	1.6%
Business service industries	0%	4.4%
Government service industries	26.9%	7.2%
Educational service industries	17.9%	7.7%
Health and social service industries	17.9%	11.7%
Accommodation, food and beverage service industries	3.0%	6.9%
Other service industries	0%	7.0%

Source:

1. Statistics Canada 1996 Census of Canada.

Notes:

1. Only 20% sample data.
2. Based on entire population at Nelson House (i.e. includes some non-NCN members) ages 15 and older.

The results in [Table 2.19](#) above are fairly consistent with results from the major employers surveyed in Nelson House about the number of people they employ. Of the 259 people employed by the employers surveyed:

- 22% were employed in government service industries
- 32% were employed in educational service industries, and
- 15% were employed in health and social services.

Additional data from the NCN Housing Authority, NCN Human Resources Department and Nelson House Forest Industries indicate that there are pools of NCN construction labour which exist in both the Nelson House and South Indian Lake communities. These are outlined in [Table 2.20](#) below.

Table 2.20
Source of Construction and Construction Support Workers Within NCN

Potential Source of Construction Workers Within NCN	Number of Workers by Occupational Category
Casual labour pool (mainly labourers used for housing construction)	<ul style="list-style-type: none"> • Approximately 100 Nelson House residents – construction labourers • There approximately 7 labourers from South Indian Lake who are now working on the South Indian Lake road • There are probably additional labourers among NCN members in Thompson
Housing construction apprentices	<ul style="list-style-type: none"> • Approximately 10 Carpenter apprentices, currently levels 1 and 2 in Nelson House • Approximately 5 Plumber apprentices, currently a mix of levels 1, 3 and 4 in Nelson House • 1 Plumber apprentice in South Indian Lake • Approximately 2 Electrical apprentices, currently levels 1 and 2 in Nelson House
Housing construction journeyman	<ul style="list-style-type: none"> • 5 to 6 Carpenters in Nelson House • 2 Electricians in Nelson House • 2 Plumbers in Nelson House
Heavy duty and automotive mechanic journeymen	<ul style="list-style-type: none"> • 3 in Nelson House
Heavy duty mechanic apprentice	<ul style="list-style-type: none"> • 1 in South Indian Lake
Nelson House Forest Industries (NHFI)	<ul style="list-style-type: none"> • Approximately 25 existing staff consisting of a mix of Equipment Operators, Teamsters and Mechanics. • NHFI also has a reserve pool of labour estimated at 10 somewhat experienced Operators & Teamsters
Clerical workers	<ul style="list-style-type: none"> • Approximately 7 in Nelson House

Potential Source of Construction Workers Within NCN	Number of Workers by Occupational Category
	<ul style="list-style-type: none"> • Approximately 3 in South Indian Lake
Catering	<ul style="list-style-type: none"> • 3 cooks in Nelson House • Approximately 15 to 20 in South Indian Lake with experience catering from work at the Big Sand Lake Lodge

Past Hydro Employment

There are a number of NCN members who have previous experience working for Manitoba Hydro. Results from the 2000 NCN Opinion Survey in Nelson House, indicate that approximately seven per cent of NCN members over the age of 25 years living in Nelson House received training at the Limestone Training and Employment Agency (LTEA) and five per cent worked on construction of the Limestone Generating Station. Manitoba Hydro data on Limestone employment indicate that, in total, 23 NCN members from Nelson House and an additional six people from the Northern Affairs community of Nelson House were hired to work on construction of the Limestone project (Manitoba Hydro 2002).

An additional 16 per cent of those surveyed in Nelson House over the age of 16 years said they had worked on other Manitoba Hydro projects, including:

- Construction of the Notigi Control Structure (3 per cent)
- Shoreline clearing around Nelson House in 1976 (2 per cent), and
- Line cutting and/or brush cutting (4 per cent)

A similar survey of NCN members undertaken in South Indian Lake in August 2001 found that six per cent of members over the age of 25 had taken training at the LTEA and three per cent worked on construction of the Limestone Generating Station. Data on employment during the Limestone project from Manitoba Hydro indicates that six NCN members living in South Indian Lake received employment during Limestone construction.

Of members surveyed in South Indian Lake, 19 per cent of those over the age of 16 years had worked on other Manitoba Hydro projects, including shoreline clearing (7 per cent), the South Bay project (3 per cent) and the construction of structure at Missi Falls (3 per cent).

In Winnipeg and Thompson, NCN members surveyed in September 2001 indicated that, among those over the age of 25 years, three per cent had taken training at LTEA and four per cent had worked on constructing the Limestone Generating Station. Limestone employment data from Manitoba Hydro indicates that one NCN members was hired from Thompson during construction of the project.

Of those over the age of 16 years, eight per cent had worked on another Manitoba Hydro project, including construction of the Notigi Control Structure (4 per cent), work on the South Bay Project (1 per cent), and work at Wuskwatim (1 per cent).

Data from Manitoba Hydro on employees hired for Limestone construction also indicate that one NCN member was hired during construction from each of Cormorant and Leaf Rapids.

Unemployment

Unemployment is determined by calculating the percentage of people in the active labour force that are not employed, but are currently looking for work. Unemployment at Nelson House was calculated using Statistics Canada data for 1991 and 1996 and the 2000 NCN Opinion Survey – Total Sample. Similar limitations apply to these data sources, as they did in the calculation of employment rates. Based on the results presented in Table 2.21, an estimate of the present unemployment rate in Nelson House is in the range of 45 to 55 per cent, about five times higher than the provincial unemployment rate.

Table 2.21
Unemployment Rate of NCN Members Living in Nelson House (1991, 1996 and 2000)
and of the Province (1996)

Data Source	Unemployment Rate		
	Overall	Male	Female
Statistics Canada 1991 ^{1,2}	17.7%	21.1%	12.5%
Statistics Canada 1996 ^{1,2}	45.2%	54.5%	30.8%
NCN Opinion Survey – Total Household Sample 2000 ^{4,5}	53.9%	52.1% ⁵	58.5% ⁵
Provincial Unemployment Rate – 1996 Census of Canada	10.1%	10.2%	10.0%

Notes:

1. Only 20% sample data.
2. Based on entire population at Nelson House (i.e. includes some non-NCN members) ages 15 and older
3. Small sample size; no clear definition of “actively looking for work” was provided to respondents or surveyors; the survey was done in the context of potential future hydro-electric developments in the Nelson House Resource Management Area and this may have biased the results.
4. Total labour force (as opposed to active labour force) is included in the calculation because unemployed respondents were not asked whether they were actively looking for work.
5. Includes members ages 16 to 65, rather than those ages 15 to 64.

The NCN Opinion Survey – Total Sample was also used to determine unemployment by age group, as seen [Table 2.22](#) below. These calculations are based on the total labour force identified in the questions, as opposed to only the active labour force, because questions were not asked in this survey to distinguish between the two.

Table 2.22
Unemployment Rate of NCN Members Living in
Nelson House by Age Category: 2000

Age Category	Unemployment Rate
	Opinion Survey (2000) ¹
15-19	82%
20-24	62%
25-29	48%
30-34	49%
35-39	38%
40-44	46%
45-49	44%
50-54	43%
55-59	44%
60-64	64%
Overall Average	53.9%

Notes:

1. Total labour force (as opposed to active labour force) is included in the calculation because unemployed respondents were not asked whether they were actively looking for work.

Levels of Education

Basic education levels for NCN members on-reserve were determined using the 1991 and 1996 Census of Canada and the 2000 NCN Opinion Survey – Total Sample⁶. The results from these sources are presented below in [Table 2.23](#). It should be noted that for the survey results the number of people with other non-university training with certificates may be an overestimate. This is because certificates are commonly handed out in Nelson House for various types of training, some of which may not bear designation with any professional organization. In addition, the number of people who stated they have completed or have taken some university training seems quite high in the NCN Human Resources Survey, when compared to the other data sources. Overall, however, the results indicate that general levels of education are increasing in Nelson House.

⁶ The 2000 NCN Opinion Survey was undertaken in the summer of 2000 in Nelson House to gain a better appreciation about the opinions and perspectives of NCN members living on-reserve about proposed future hydro-electric developments in the Nelson House Resource Management Area. It included questions on demographics. Survey respondents were ages 16 and older.

Table 2.23
Highest Level of Education of NCN Members Living in Nelson House

Level of Education	Percentage of total NCN members living at Nelson House ages 15 and over		
	1991 Statistics Canada ^{1,2} (Total = 785)	1996 Statistics Canada ^{1,2} (Total = 1,070)	2000 NCN Opinion Survey (Total = 813)
Less than Grade 9	41.0%	33.6%	22.9%
Grades 9 to 12:	33.8%	43.0%	40.4%
– Without Secondary School Graduation Certificate	31.2%	36.9%	30.4%
– With Secondary School Graduation Certificate	2.6%	6.1%	10.0%
Trades			7.2%
– Without Certificate or Diploma	N/A	N/A	3.3%
– With Certificate or Diploma	3.8%	0.9%	3.9%
Other Non-University Education Only	12.1%	11.2%	15.2%
– Without Certificate Or Diploma	3.2%	4.7%	4.1%
– With Certificate Or Diploma	8.9%	6.5%	11.1%
University:	8.9%	11.7%	11.0%
– Without Degree	4.5%	8.4%	7.9%
– With Bachelor's Degree or Higher	4.5%	2.8%	3.1%
Not Stated:	N/A	N/A	3.4%

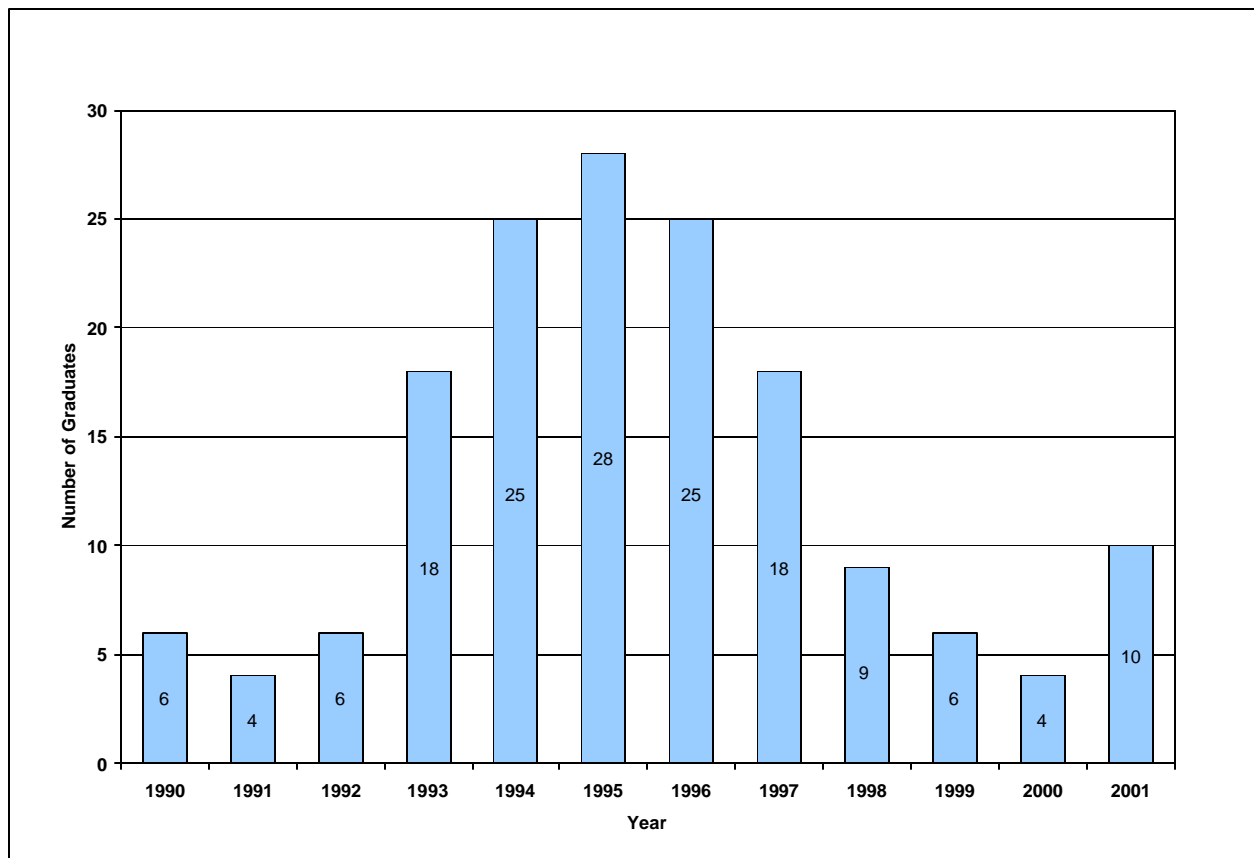
Notes:

1. Only 20% sample data
2. Based on entire population at Nelson House (i.e. includes some non-NCN members) ages 15 and over.

High School Graduation Levels

The number of NCN graduates from high school for each year from 1990 to 2001 was provided by the Nelson House Education Authority (NHEA). The data include NCN members who graduated from O.K. School in Nelson House, as well as those who graduated from schools off-reserve. Figure 2.14 below indicates that the number of high school graduates was quite low from 1990 to 1992, reached a peak in 1995 with 28 graduates and has subsequently decreased, with only 9 graduates in 1998, 6 graduates in 1999, 4 graduates in 2000 and 10 graduates in 2001. In each of these years, enrolment in S4 (Grade 12) ranged from 32 to 96 students (INAC Nominal Roll Report).

Figure 2.14
Number of NCN High School Graduates: 1990 to 2001



Source:

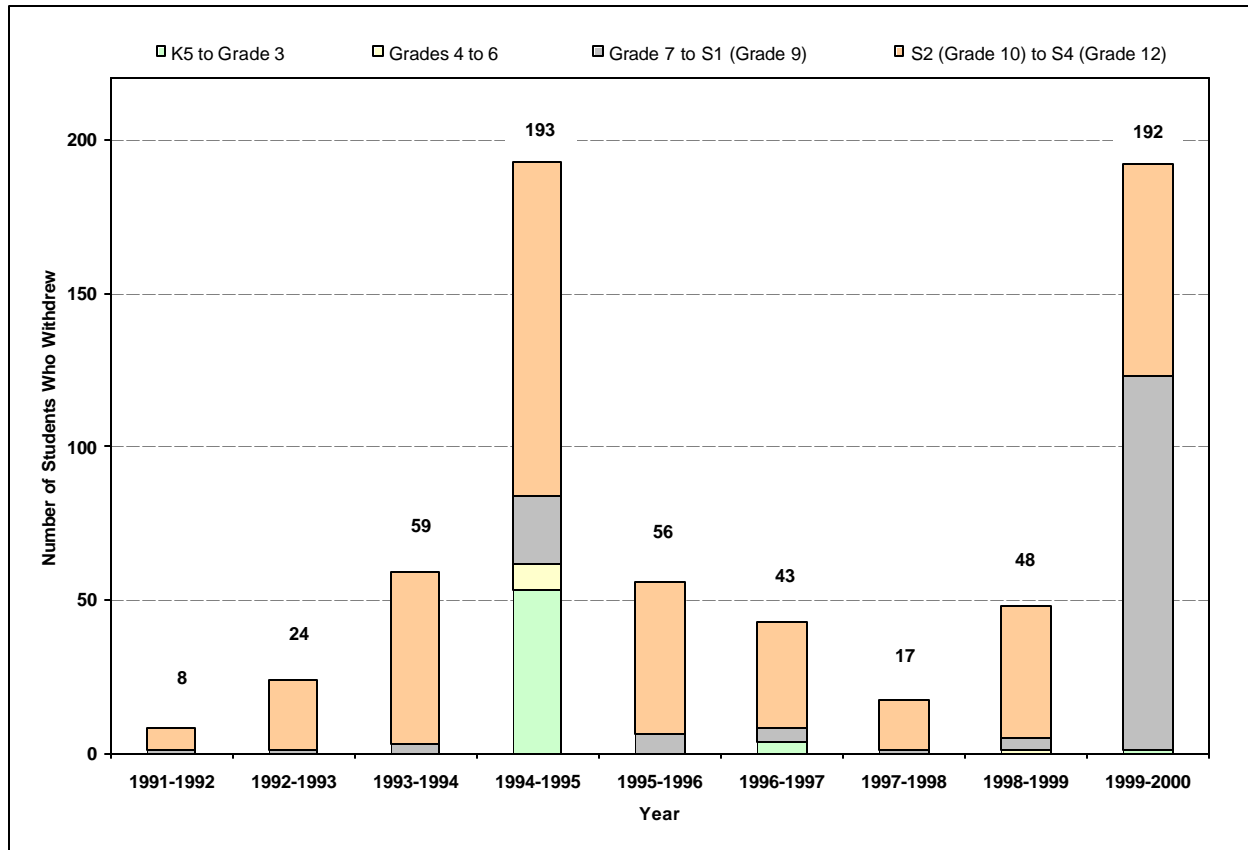
1. Nelson House Education Authority List of Graduates for 1990 to 2001.

Withdrawal Levels

The INAC Nominal Roll Report provides a rough estimate of on-reserve withdrawal levels among NCN members. For each of the ten years from 1990 to 2000, INAC recorded the number of students who withdrew⁷ from O.K. School in Nelson House. Figure 2.15 below indicates that, based on this information, the number of students who withdrew from O.K. School reached highs in the 1995-1996 school year when 181 students withdrew and in the 1999-2000 school year when 182 students withdrew. It also

indicates that most of the students who withdrew from school in Nelson House left during the S2 (Grade 10) to S4 (Grade 12) levels; however, in 1999-2000 a large proportion of the students who withdrew left at the Grade 7 to S1 (Grade 9) levels.

Figure 2.15
Number of Students Who Withdrew From O.K. School
Per Grade: 1991-1992 to 1999-2000



Source:

1. INAC Nominal Roll Report of Leavers by Reason Code for Nisichawayasihk Cree Nation – 1991-1992 to 2000-2001.

Note:

1. These are students who voluntarily withdrew and does not include students who transferred, moved off-reserve, graduated or passed away.

In each of these years (1991 to 2000), students left school in Nelson House because they withdrew (as seen above), graduated, transferred to another school, moved off-reserve or passed away. In total, over this nine-year time period, INAC records indicate that:

- 640 students withdrew
- 165 students graduated
- 135 students transferred

⁷ These are students who voluntarily withdrew and does not include students who transferred, moved off-reserve, graduated or passed away.

- 317 students moved off-reserve, and
- 13 students passed away.

No transfers to other facilities were recorded after the 1994-1995 school year, when 93 students transferred (40 of whom were in S1 (Grade 9) or above). In the previous two school years, 1993-1994 and 1992-1993, 17 and 24 students transferred respectfully.

In addition to these data, the 2000 NCN Human Resources Survey asked respondents to indicate why they had left school or university and what incentives would encourage them to return to school. Of the 71 respondents who indicated why they had left school or university, the main reasons were:

Had a child/started a family	28% (70% of which were below age 30)
Got a job	20%
Did not like school/teacher	13%
Not enough funding available to support self or family	7%
Kicked out/suspended	7%
Did not want to lose home because returned to school	3%
Too much physical abuse/violence	3%
Illness	3%

When asked what incentives would encourage them to return to school, 58 people responded. The most common answers were:

Better funding	38%
Course availability (job training courses, upgrading courses and night courses)	22%
Availability of job opportunities	16%
Training facilities at NCN	12%
Available daycare	12%

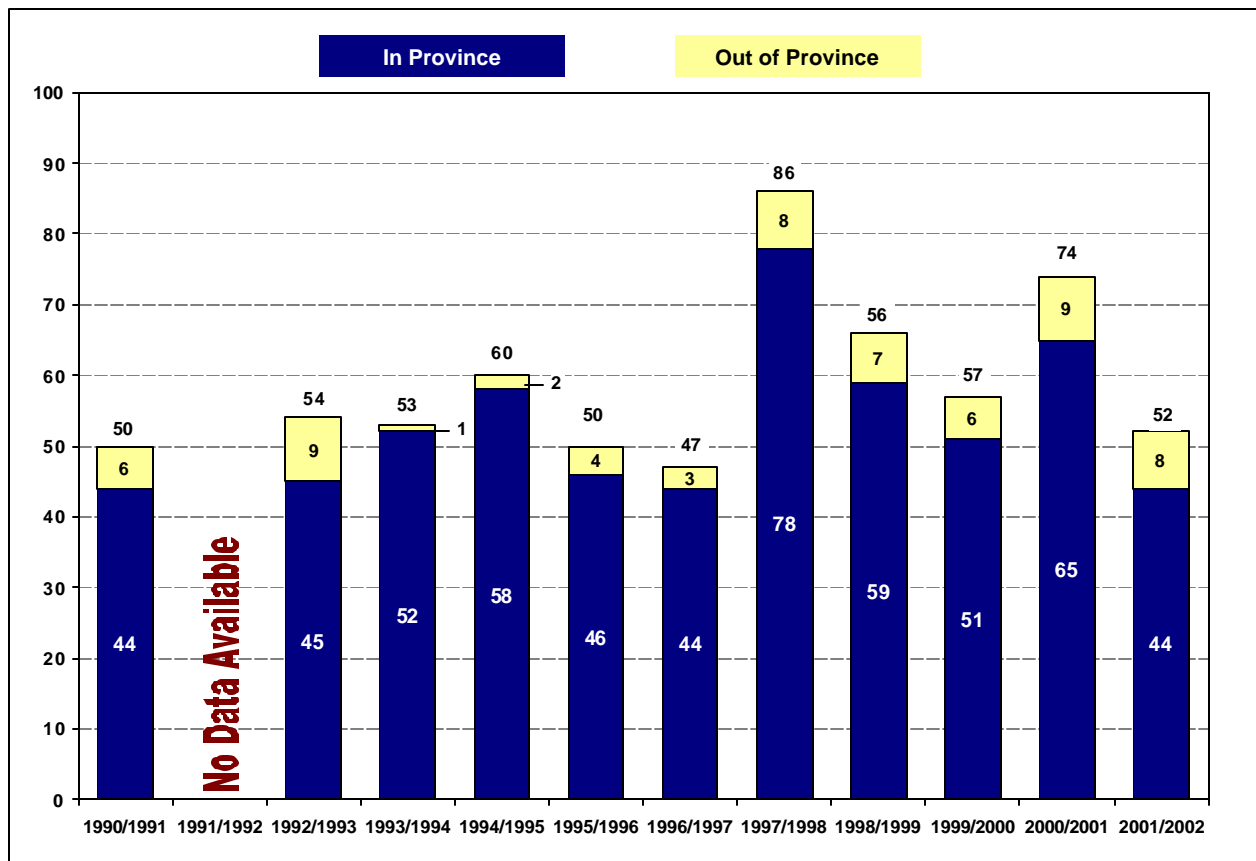
Post-Secondary Enrolments and Graduation

Data on post-secondary enrolments and graduations were provided by INAC, the Nelson House Education Authority and the Manitoba Apprenticeship Branch (through the NCN Human Resources Office). These are outlined below for university, college and apprenticeship programs.

University Enrolments and Graduation

Data on university enrolments for both in and out of province universities were provided by INAC for the years 1990-1991 to 2000-2001 for all NCN Members (on- and off-reserve). [Figure 2.16](#) below indicates that enrolments of NCN members at universities during these years fluctuated from between 47 and 86 students. Of these, approximately 90 per cent were enrolled at universities within Manitoba. The most commonly attended universities were Brandon University and the University of Manitoba.

Figure 2.16
University Enrolments of NCN Members at In Province and
Out of Province Universities: 1990-1991 to 2000-2001



Source:

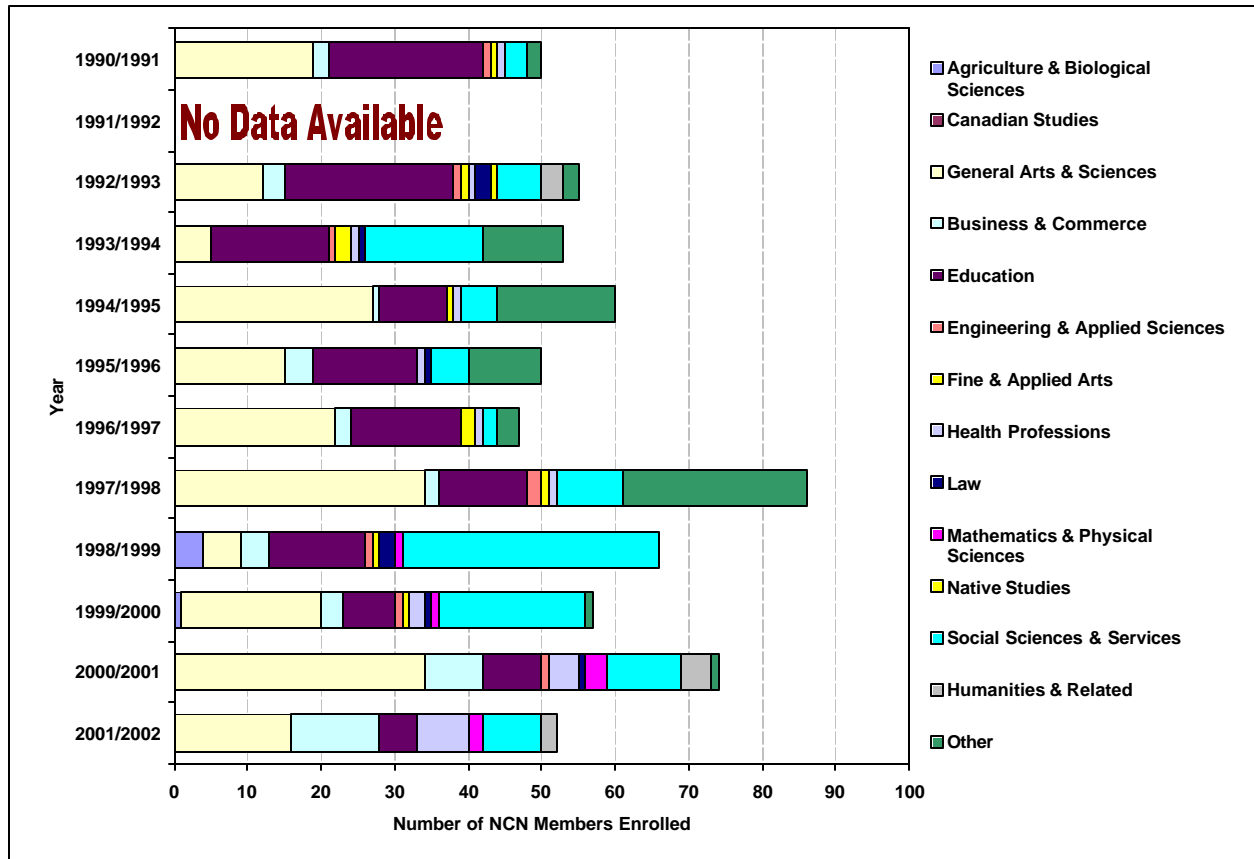
1. INAC records of post-secondary enrolments by field of study: 1990-1991 to 2000-2001.

Note:

1. Includes members with permanent addresses both on- and off-reserve.

Figure 2.17 below indicates the fields of study enrolled in by NCN members attending university between 1990-1991 and 2000-2001, based on INAC data. According to the figure below, it appears that the most common fields of study for NCN members over this time period were General Arts and Sciences, Education, and Social Sciences and Services.

Figure 2.17
Fields of Study for NCN Members Enrolled in University: 1990-1991 to 2000-2001



Source:

1. INAC records of post-secondary enrolments by field of study: 1990-1991 to 2000-2001.

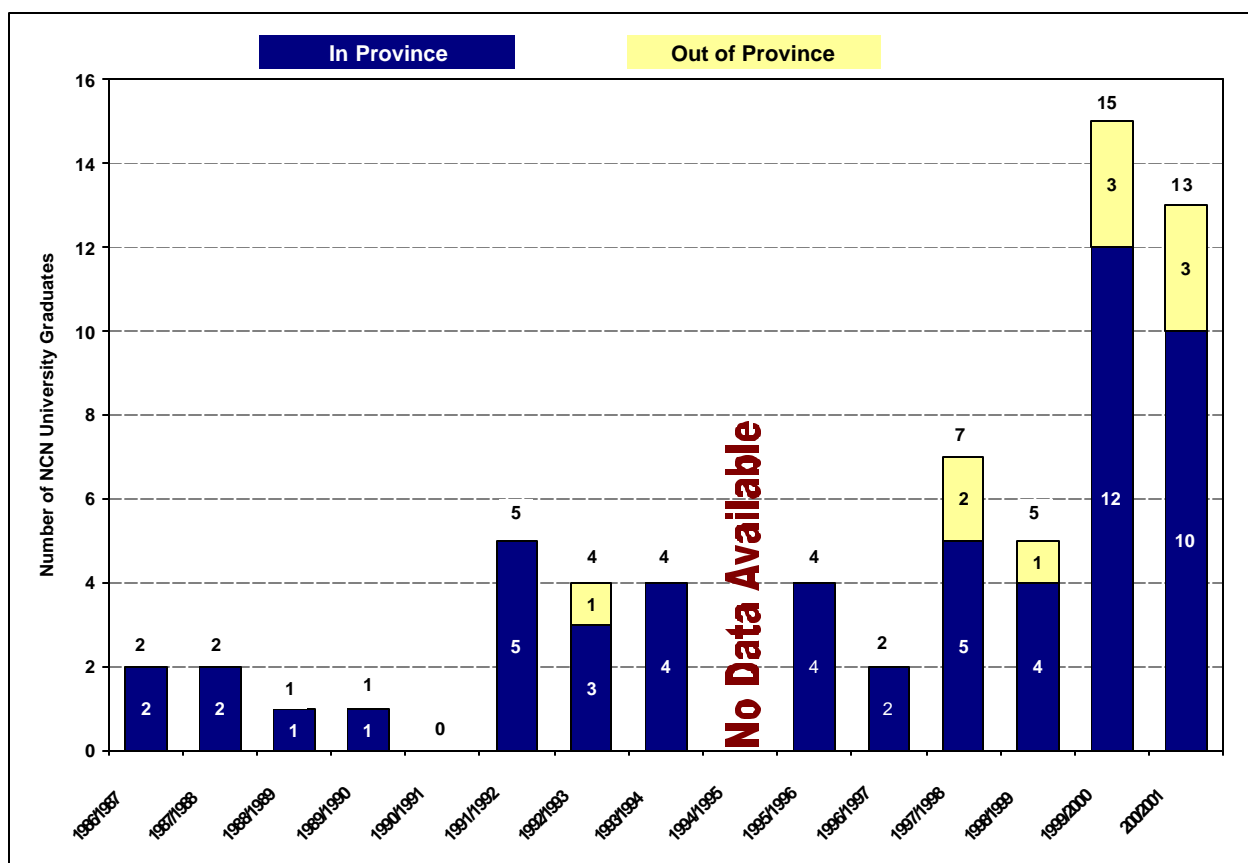
Note:

1. Includes members with permanent addresses both on- and off-reserve.

Figure 2.18 below indicates the number of NCN members who graduated from university for the years 1986-1987 to 1993-1994 to 2000-2001, based on Nelson House Education Authority records (1986-1987-1989-1990) and INAC data (1990-1991 to 2000-2001).

The figure indicates that, in general, the number of university graduates among NCN members has significantly increased from the late 1980's/early 1990's to 2000-2001. As well, most NCN members who obtained university degrees during these years graduated from in-province universities, primarily the University of Manitoba and the University of Brandon.

Figure 2.18
Number of NCN University Graduates from In-Province and
Out of Province Universities: 1986-1987 to 2000-2001



Sources:

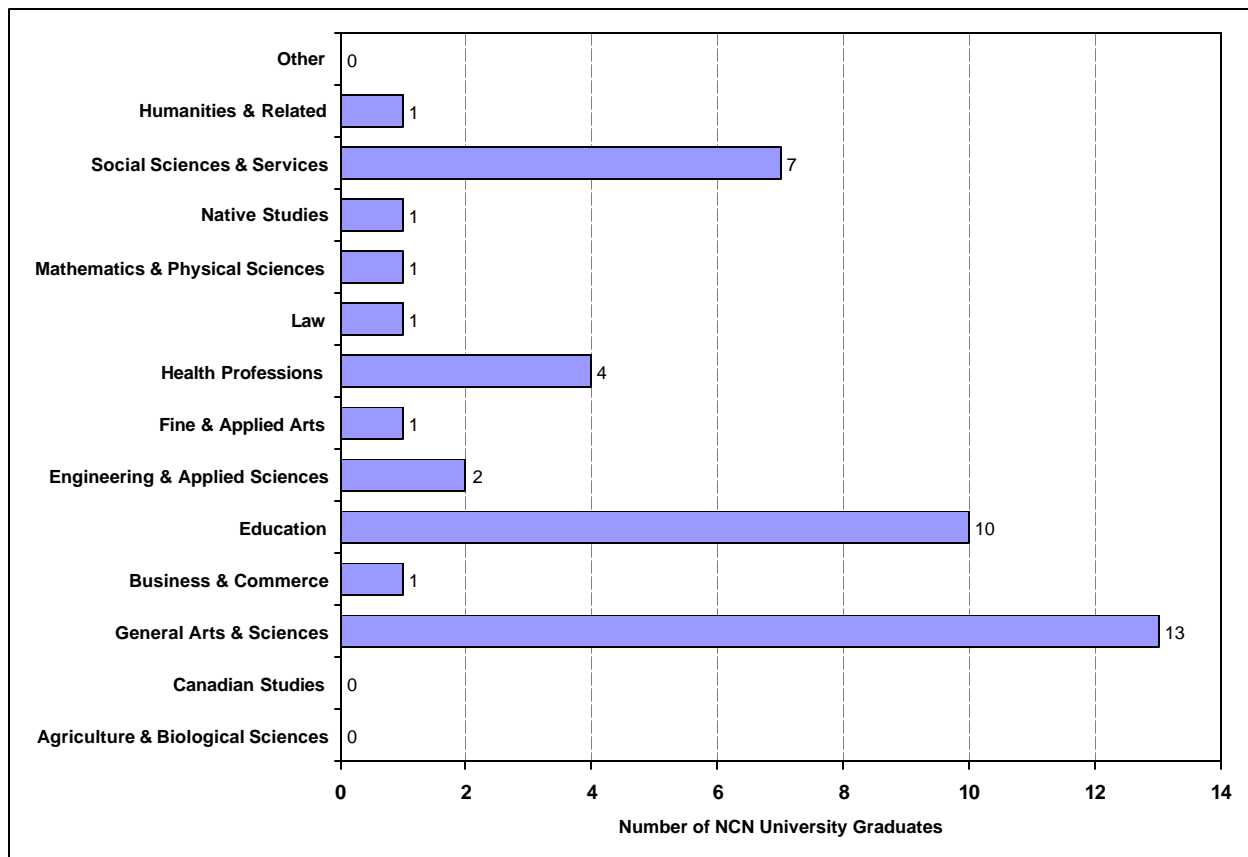
1. Nelson House Education Authority records indicating the number of NCN graduates by university and degree for 1986-1987 to 1989-1990.
2. INAC records indicating the number of NCN graduates by university and field of study for 1990-1991 to 2000-2001.

Notes:

1. Includes members with permanent addresses both on- and off-reserve.
2. Data from the Nelson House Education Authority for the years 1986-1987 to 1989-1990 only includes graduates from universities in Winnipeg.

The fields of study from which NCN members graduated during the years 1986-1987 to 2000-2001 is outlined in [Figure 2.19](#) below. The most commonly obtained degrees during this time period were in the fields of Education, Social Sciences and Services, and General Arts and Sciences.

Figure 2.19
Number of NCN University Graduates by Subject Area of Degree:
1986-1987 to 2000-2001



Sources:

1. Nelson House Education Authority records indicating the number of NCN graduates by university and degree for 1986-1987 to 1989-1990.
2. INAC records indicating the number of NCN graduates by university and field of study for 1990-1991 to 2000-2001.

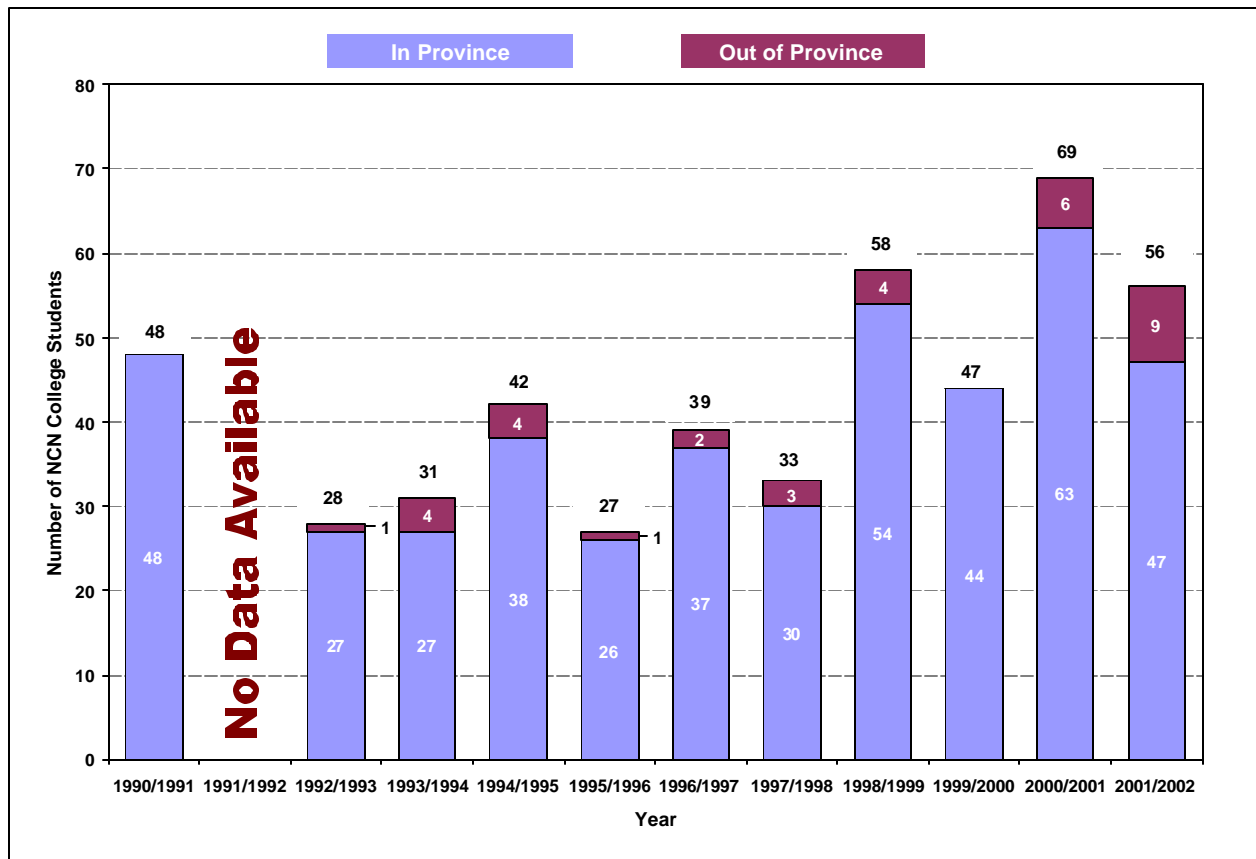
Notes:

1. Includes members with permanent addresses both on- and off-reserve.
2. Data from the Nelson House Education Authority for the years 1986-1987 to 1989-1990 only includes graduates from universities in Winnipeg.

College Enrolments and Graduation

As with university enrolments, data on college enrolments for in and out of province colleges were provided by INAC for the years 1990-1991 to 2000-2001. [Figure 2.20](#) below indicates that enrolments of NCN members at colleges fluctuated between 27 and 69 students during this time period. Of these, over 90 per cent were enrolled at colleges within Manitoba during each year, primarily Keewatin Community College and Red River Community College.

Figure 2.20
College Enrolments of NCN Members at In Province and
Out of Province Colleges: 1997-1998 to 2000-2001



Source:

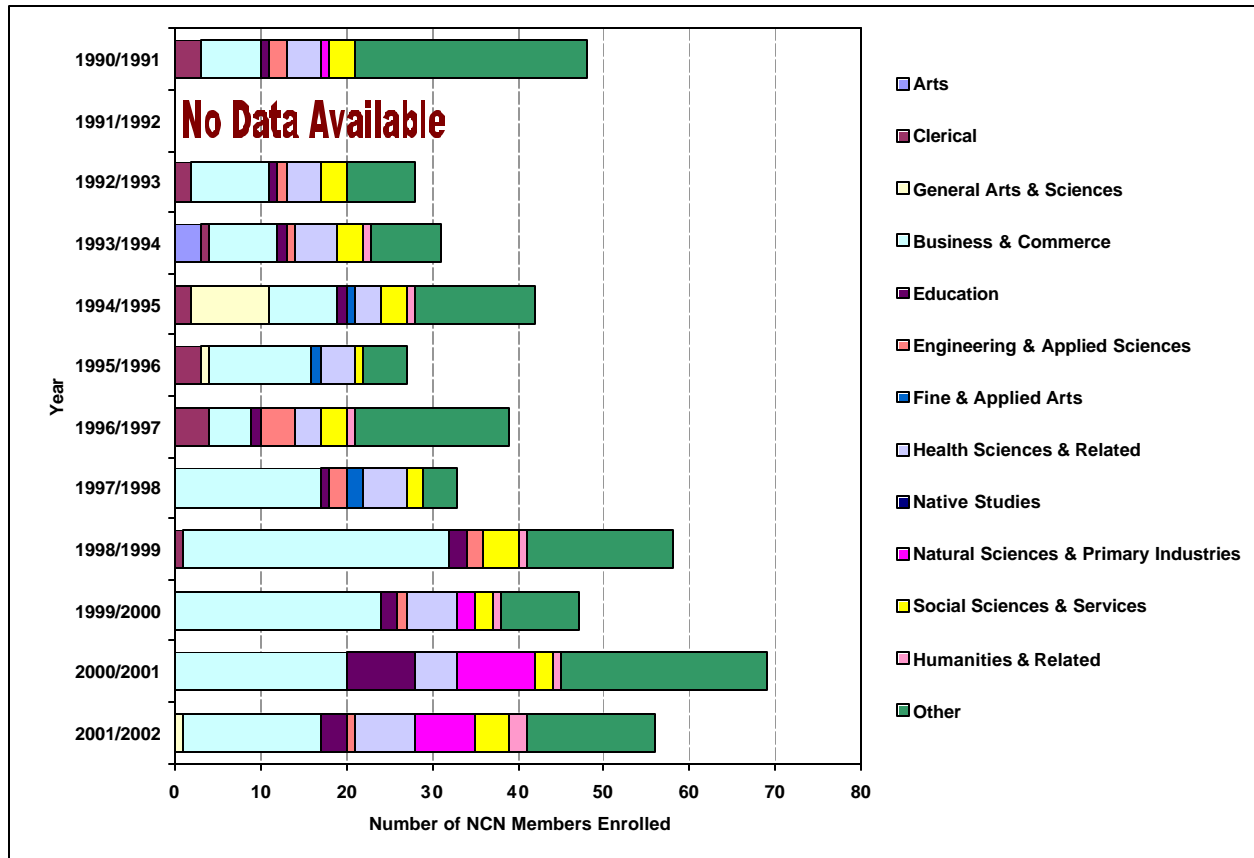
1. INAC records of post-secondary enrolments by field of study: 1990-1991 to 2000-2001.

Note:

1. Includes members with permanent addresses both on- and off-reserve.

College enrolments by field of study for each year from 1990-1991 to 2000-2001 are outlined in [Figure 2.21](#) below. The most common field of study during these years was Business and Commerce. (A summary of subject areas in each field of study is included as [Appendix 1](#)).

Figure 2.21
College Enrolments of NCN Members by Field of Study: 1990-1991 to 2000-2001



Source:

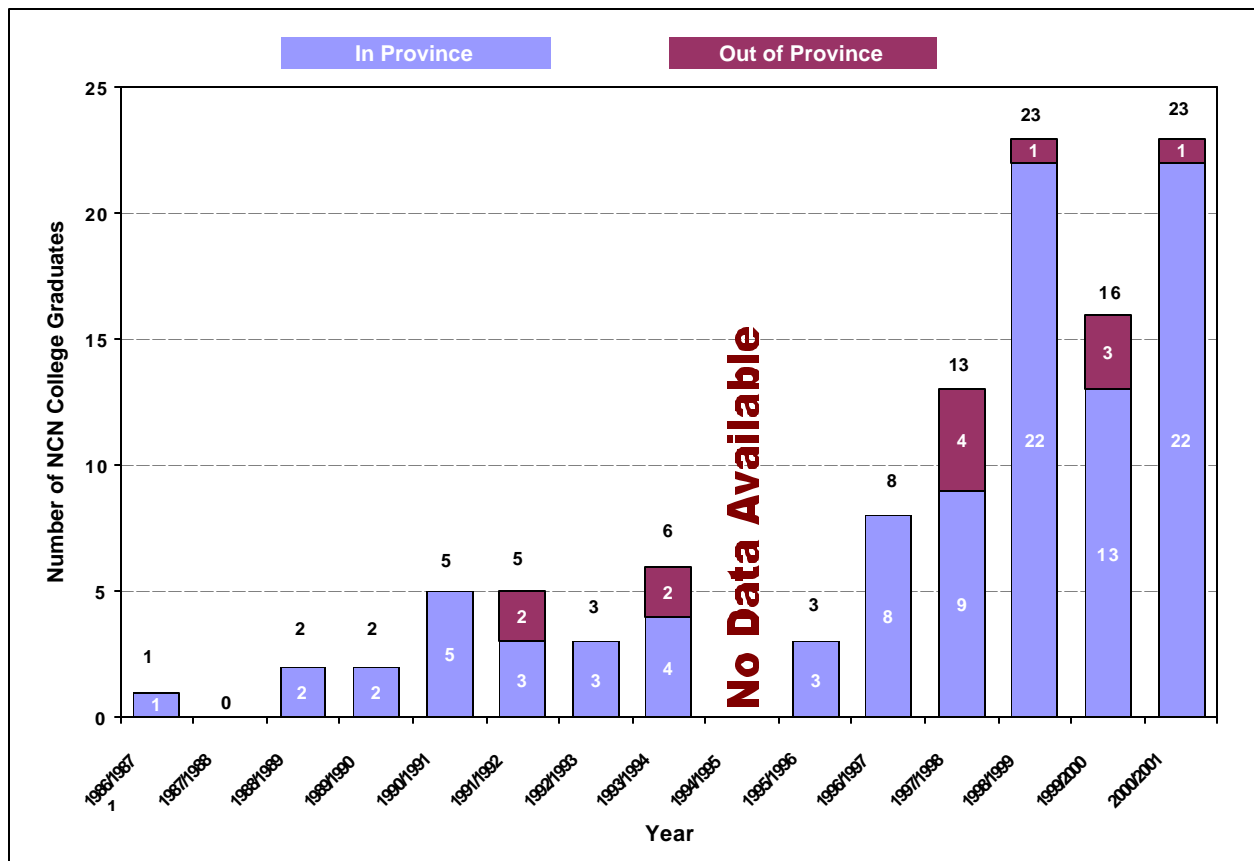
1. INAC records of post-secondary enrolments by field of study: 1997-1998 to 2000-2001.

Note:

1. Includes members with permanent addresses both on- and off-reserve.

A combination of Nelson House Education Authority records and INAC data were used to determine the number of college graduates from 1986-1987 to 2000-2001. These data are outlined in [Figure 2.22](#) below, which includes the number of graduates per year from both in province and out of province colleges. As with university graduates, there was a significant increase in the number of NCN college graduates between the late 1980s/early 1990s and 2000-2001.

Figure 2.22
Number of NCN College Graduates from In-Province and
Out of Province Colleges: 1986-1987 to 2000-2001



Sources:

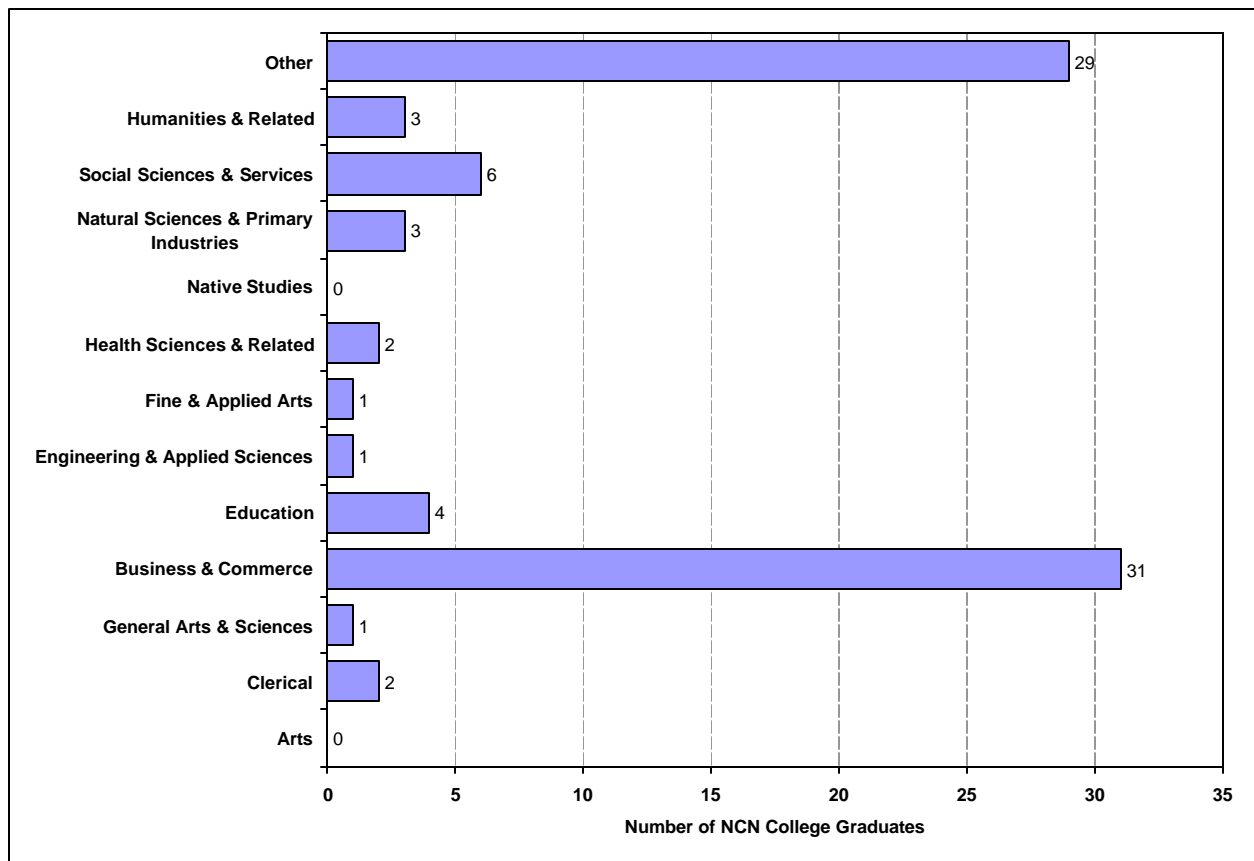
1. Nelson House Education Authority records indicating the number of NCN graduates by college and diploma for 1986-1987 to 1993-1994.
2. INAC records indicating the number of NCN graduates by college and field of study for 1997-1998 to 1999-2000.

Notes:

1. Includes members with permanent addresses both on- and off-reserve.
2. Data from the Nelson House Education Authority for the years 1986-1987 to 1991-1992 only includes graduates from colleges in Winnipeg.

College graduates during the time periods of 1986-1987 to 2000-2001 can also be classified by field of study using Nelson House Education Authority Data and INAC records. [Figure 2.23](#) below indicates that, as with enrolments, the most common field of study for NCN members who graduated from college during these time periods was Business and Commerce. (A summary of subject areas in each field of study is included as Appendix 1).

Figure 2.23
Number of NCN College Graduates by Subject
Area of Degree: 1986-1987 to 2000-2001



Sources:

1. Nelson House Education Authority records indicating the number of NCN graduates by college and diploma for 1986-1987 to 1993-1994.
2. INAC records indicating the number of NCN graduates by college and field of study for 1997-1998 to 1999-2000.

Notes:

1. Includes members with permanent addresses both on- and off-reserve.
2. Data from the Nelson House Education Authority for the years 1986-1987 to 1991-1992 only includes graduates from colleges in Winnipeg.
3. A complete set of data from INAC has been requested and should be received by the end of December 2001.

Apprenticeable Trades Training

According to Manitoba Apprenticeship Branch Records, the following outlines the number of NCN members living in Nelson House who have completed apprenticeship or journeymen training. In total, there are six journeymen, and one person completing Level 5 in 2001. Four people are working on becoming Level 1 apprentices and there are a Level 2 apprentice and two Level 3 apprentices. Data for NCN members living elsewhere in the province were not available.

Table 2.24
Trades Training of NCN Members Living in Nelson House: 2001

Trade	Apprenticeship				Journeyman
	Level 1	Level 2	Level 3	Level 4	
Carpentry	<ul style="list-style-type: none"> • 3 members have completed the required hours of work, but still need to complete classroom training • 1 member has completed the hours required for Level 1 and 2, but still needs to complete classroom training 	<ul style="list-style-type: none"> • 1 member has completed the hours required for Level 1 and 2, but still needs to complete classroom training 			<ul style="list-style-type: none"> • 2 members have journeyman status • 1 member is completing Level 5 and is expected to graduate as a journeyman in June 2001
Plumbing		<ul style="list-style-type: none"> • 1 member has completed Level 2, but failed the Level 3 exam 		<ul style="list-style-type: none"> • 2 have completed all of their Level 4 hours, but need to rewrite the in-class exam 	<ul style="list-style-type: none"> • 2 members have journeyman status
Construction Electrician					<ul style="list-style-type: none"> • 2 members have journeyman status

Source: Manitoba Apprenticeship Branch, May 2001 (obtained by NCN Human Resources)

2.2.1.1.2 Income Levels and Sources

Annual income for Nelson House residents is presented below as:

- Average income per person – personal income earned.
- Employment income – income earned from employment.
- Household income – total income earned by everyone living in the household.
- Family income – total income earned by family living in a household.
- Non-monetary income – income in-kind earned from activities like resource harvesting.

The data presented were collected from the 1991 and 1996 Census of Canada and the 2000 NCN Opinion Survey – Total Sample. Data from the 2001 informal survey of 21 main employers in Nelson House were also considered; of those surveyed, four provided income data, including NCN Government, which accounted for approximately 22% of the people employed by those surveyed. Only cash income is included in all of these studies, and all incomes are before taxes.

Average Income Per Person

Average income per person on an annual basis was estimated using data from the 1991 and 1996 Census of Canada. The results are presented in Table 2.25 below, with a comparison to average annual income in Manitoba for these years. Nelson House residents had a lower annual income than an average Manitoba resident. For example, in 1996, an average Nelson House resident had an annual income of \$11,621, while an average Manitoban had an annual income of \$25,196.

Table 2.25
Average Annual Income of NCN Members Living
in Nelson House: 1991, 1996 and 2000

Data Source	Average Annual Income ¹		
	Overall	Male	Female
<i>Statistics Canada 1991^{2,3}</i>			
• Nelson House	N/A	\$10,894	\$8,066
• Manitoba	N/A	\$30,205	\$17,577
<i>Statistics Canada 1996^{2,3}</i>			
• Nelson House	\$11,621	\$11,191	\$12,105
• Manitoba	\$25,196	\$31,117	\$19,208

Notes:

1. Incomes cited are before taxes.
2. Only 20% sample data.
3. Based on entire population at Nelson House (i.e., includes some non-NCN members).

Employment Income

Although employed residents in Nelson House have incomes higher than the community average, employment income in Nelson House is generally lower than the average for Manitoba. [Table 2.26](#) below outlines average employment income for Nelson House and Manitoba based on Statistics Canada data for 1991 and 1996. It is consistent with data provided by the four employers in Nelson House that provided income information. Most of the salaries provided by these employers ranged from about \$19,000 to \$39,000 for full-time workers.

Table 2.26
Average Annual Employment Income of NCN Members Living
and Working Full-Time in Nelson House: 1991, 1996 and 2000

Data Source	Average Annual Income ¹		
	Overall	Male	Female
<i>Statistics Canada 1991^{2,3}</i>			
• Nelson House	N/A	\$22,341	\$19,206
• Manitoba	N/A	\$33,509	\$23,403
<i>Statistics Canada 1996^{2,3}</i>			
• Nelson House	\$26,134	\$28,046	\$24,451
• Manitoba	\$32,564	\$36,630	\$26,260

Sources: Statistics Canada 1991 and 1996 Census of Canada - 100% Data

Notes:

1. Incomes cited are before taxes.
2. Only 20% sample data.
3. Based on entire population at Nelson House (i.e., includes some non-NCN members).

Tables 2.25 and 2.26 indicate that the income earned from employment is generally higher than from other sources.

Household Income

Annual household income is defined as the amount of income earned by all persons living in the household. Both the 1996 Census of Canada and the 2000 NCN Opinion Survey – Total Household Sample were used to estimate household income per annum in Nelson House. The results from these two sources are presented in the table below. They indicate that from 1991 to 1996, average household income in Nelson House rose by 1.6 per cent. Assuming this growth were to continue, average household income in 2000 would have been approximately \$33,815. Overall, average household income in Nelson House is substantially less than for the average Manitoba household.

Table 2.27
Annual Household Income of NCN Members Living in
Nelson House (1991, 1996, 2000) and of the Province (1996)

Household Income (\$\$/year) ¹	Percentage of Total Households in Nelson House		
	Statistics Canada 1991 ^{2,3,4} (Total number of Households = 245)	Statistics Canada 1996 ^{2,3,4} (Total number of Households = 365)	2000 NCN Opinion Survey ⁵ (Total number of Households = 377)
Under \$10,000	10%	7%	32%
\$10,000 to \$19,999	22%	23%	26%
\$20,000 to \$29,999	27%	32%	14%
\$30,000 to \$39,999	20%	15%	8%
\$40,000 and greater	21%	23%	14%
Average Household Income	\$29,078	\$31,742	Not available⁴
Average Household Income in Manitoba	\$40,179	\$43,404	

Sources: Statistics Canada 1991 and 1996 Census of Canada - 100% Data

Notes:

1. Incomes cited are before taxes.
2. Only 20% sample data.
3. Based on entire population at Nelson House (i.e. includes some non-NCN members).
4. Totals may not add to 100% due to rounding.
5. Average household income from the NCN opinion Survey data is not available because participants were asked to what range of income their household earned, rather than the exact amount of household income earned.

Family Income

Family income is defined as the amount of income earned by a family, where family is defined as a married or common-law couple living together, with or without never-married sons or daughters; or a lone parent living with at least one never-married son or daughter. The 1996 Census of Canada is the only source available for determining family income. The data should be regarded with caution, however, because they represent income information collected from only 20 per cent of the population. The results indicate that from 1991 to 1996, average family income grew by 3.4 per cent. Assuming this growth were to continue, average family income in 2000 would have been about \$31,167. Overall, average family income in Nelson House is about 50 per cent less than that seen for the average family in Manitoba.

Table 2.28
Annual Family Income of NCN Members Living in
Nelson House (1991, 1996 and 2000) and of the Province (1996)

Family Income (\$\$) ¹	Percentage of Total Families in Nelson House	
	Statistics Canada 1991 (Total number of Families = 235) ^{2,3,4}	Statistics Canada 1996 (Total number of Families = 350) ^{2,3,4}
Under \$10,000	19%	13%
\$10,000 to \$19,999	36%	33%
\$20,000 to \$29,999	23%	26%
\$30,000 to \$39,999	15%	11%
\$40,000 and greater	8%	16%
Average Family Income	\$23,124	\$27,295
Average Family Income in Manitoba	\$46,091	\$50,236

Sources: Statistics Canada 1991 and 1996 Census of Canada - 100% Data

Notes:

1. Incomes cited are before taxes.
2. Only 20% sample data
3. Based on entire population at Nelson House (i.e. includes some non-NCN members)
4. Totals may not add to 100% due to rounding

Non-Monetary Income - Resource Economy

Commercial and domestic resource harvesting were once mainstays of the local economy, but their relative importance to the local economy, in terms of dollar value, has diminished in recent years. Despite this, a substantial number of NCN members continue to participate in traditional resource-based activities throughout the RMA that provide both cash and income-in-kind for many residents. These activities continue to be important for economic, social and cultural reasons and there are efforts to encourage greater participation in them.

Commercial Resource Economy

The commercial resource economy in the Nelson House RMA consists primarily of commercial fishing and commercial trapping (see EIS [Volume 7](#) on Resource Use). There are some additional activities, such as forestry, that contribute to the resource economy, but to a lesser degree. As well, there is one outfitter from Thompson, Trapper Mike's, who has an outfitting license in the area immediately north of Birchtree Lake (see EIS [Volume 7](#): Resource Use).

In general, there has been a decrease in the revenues generated by the local resource economy, particularly in terms of their relative importance to the overall NCN economy. Commercial trapping activities have decreased dramatically in the past 10 to 15 years, and commercial fishing has also declined in the past 5 years.

Table 2.29 below presents trapping data for the Nelson House Registered Trapline (RTL) District (same boundaries as the Nelson House RMA) from 1976/1977 to 2000/2001, including number of trappers, value of species trapped, and average income per person. Based on the commercial trapping data available, between 1976 and 1990, the number of trappers reporting harvests from registered traplines in the Nelson House RTL District was approximately 129 people annually. After 1990, this dropped to approximately 53 trappers reporting annual harvests from the RMA. The number of traplines from which harvests were reported peaked in 1979/1980 at 47 (see EIS [Volume 7](#): Resource Use).

The total gross value of annual fur harvests from the Nelson House RTL District since 1976 peaked in 1978/1979 at more than \$1 million (adjusted to 2001 values). Annual harvest value decreased to about \$190,000 by 1981/1982 and remained relatively stable during the 1980s, averaging \$188,000, before dropping again in 1989/1990 to about \$47,000. The average annual harvest value from 1989/1990 to 2000/2001 was about \$53,000, or 15 per cent of the average annual harvest value reported from the previous 14 years. The value of the harvest in 2000/2001 was about \$59,000 (see EIS [Volume 7](#): Resource Use). Declining fur prices during the 1980s is a key factor contributing to the reduction in harvests. Reductions in harvest numbers, decreased fur quality, and problems with access to certain traplines have also contributed to the decrease in trapping activity and revenues (see EIS [Volume 7](#): Resource Use).

Table 2.29
Summary of Traplines Reporting Harvest, Total Value of Commercial Harvest (2001 \$) and
Total Value of Commercial Harvest per Trapline for the
Nelson House RMA: 1976/1977 to 2000/2001

Year	Number of Traplines in the Nelson House RTL Reporting Harvest (Total = 65) ¹	Total Value of Commercial Harvest (2001 \$) ¹	Average Value of Commercial Harvest per Trapline (2001 \$) ²
1976 / 1977	41	313,489	7,646
1977 / 1978	47	930,216	19,792
1978 / 1979	46	1,091,548	23,729
1979 / 1980	48	591,647	12,326
1980 / 1981	44	320,501	7,284
1981 / 1982	44	189,613	4,309
1982 / 1983	41	106,587	2,600
1983 / 1984	42	117,184	2,790
1984 / 1985	42	237,039	5,644
1985 / 1986	35	170,323	4,866
1986 / 1987	40	274,242	6,856
1987 / 1988	42	176,060	4,192
1988 / 1989	40	109,490	2,737
1989 / 1990	29	48,367	1,668

Year	Number of Traplines in the Nelson House RTL Reporting Harvest (Total = 65) ¹	Total Value of Commercial Harvest (2001 \$) ¹	Average Value of Commercial Harvest per Trapline (2001 \$) ²
1990 / 1991	N/A	N/A	N/A
1991 / 1992	25	31,599	1,264
1992 / 1993	21	23,568	1,122
1993 / 1994	30	79,310	2,644
1994 / 1995	N/A	N/A	N/A
1995 / 1996	N/A	N/A	N/A
1996 / 1997	29	53,346	1,840
1997 / 1998	37	60,148	1,626
1998 / 1999	26	75,198	2,892
1999 / 2000	28	50,699	1,811
2000 / 2001	32	59,461	1,858

Sources:

1. (see EIS [Volume 7: Resource Use](#)). Summary of trapping data by line for the NCN RMA from 1976/1977 to 2000/2001 (data not available for 1990/1991, 1994/1995 and 1995/1996).
2. Calculated by InterGroup Consultants, based on values provided in EIS [Volume 7: Resource Use](#).

Note:

1. All values rounded to the nearest dollar.

Since 1976, commercial fishing has occurred on 29 of the 47 lakes in the Nelson House RMA, including Threepoint Lake and Wuskwatim Lake. [Table 2.30](#) below indicates that from 1976 to 2001, the average annual value of commercial fish production from the Nelson House RMA was about \$208,000 (adjusted to 2001 values). In general, commercial fishing in the Nelson House RMA has declined in recent years (see EIS [Volume 7: Resource Use](#)).

On Wuskwatim Lake specifically, commercial fishing generally employs 4 to 10 individuals during the open-water season. Over the past 10 years, fishing on Wuskwatim Lake has been greatly reduced (only a small portion of the fishing quota is used) and in some years (1995, 1996 and 2001) there has been no commercial fishing (see EIS [Volume 7: Resource Use](#)).

While monetary incomes received from commercial trapping and fishing activities are relatively limited, the value of the experience to the resource harvesters, their families and the community as a whole is much greater. These activities, like traditional resource use (which often occurs coincidentally with commercial harvesting), are an important mainstay of the economy and way of life of people who live at Nelson House.

Table 2.30
Present Value (2001 \$) of the Nelson House RMA Commercial Fishery: 1976 to 2001

Year	All Lakes in the Nelson House RMA	Wuskwatim Lake	
	Present Value (2001\$)	Present Value (2001\$)	% Make-up of the Fishery
1976	121,289	54396	45%
1977	148,148	28941	19%
1978	186,299	-	0%
1979	129,439	-	0%
1980	229,407	42103	18%
1981	159,747	32785	21%
1982	131,689	13262	10%
1983	115,903	34527	30%
1984	203,157	20953	10%
1985	166,648	40033	24%
1986	182,745	21887	12%
1987	256,709	22671	9%
1988	266,302	42403	16%
1989	212,768	19004	9%
1990	169,325	5532	3%
1991	288,210	5890	2%
1992	316,259	37636	12%
1993	176,533	18017	10%
1994	210,889	2627	1%
1995	257,079	-	0%
1996	295,856	-	0%
1997	248,536	4764	2%
1998	308,895	30014	10%
1999	258,640	20771	8%
2000	197,733	2191	1%
2001	164,026	-	0%

Source (see EIS [Volume 7: Resource Use](#)). Value Distribution of the Nelson House RMA commercial fishery from 1976 to 2001.
 Note: All values rounded to the nearest dollar.

Traditional Resource Use

Traditional pursuits, like hunting and fishing, play an important role in contributing to the non-monetary income of NCN members living in Nelson House. The availability and use of natural resources has, to some extent, limited local reliance on store-bought items, most notably food. [Table 2.31](#) below presents data available through the Country Foods Program (average of 10 years of data) and the Harvest Calendar (collected from August 2001 to May 2002) and indicates that domestically-harvested foods are a significant contributor to local diets.

Table 2.31
Estimated Number of Meals Obtained from Domestic Harvest on an Annual Basis
by NCN Members

Meat	Weight (kg)¹	Meals Per Year^{1,2}	Per Capita Meals Per Year³
Fish ⁴	9,276	46,381	21
Waterfowl ⁵	1,606	8,032	4
Grouse	104	520	0.2
Moose	23,833	119,164	53
Caribou	1,035	5,173	2
Other Big Game ⁶	3,828	19,143	8
Small Game ⁷	1,151	5,753	3
Trap ⁸	2,157	10,791	5
Total	42,990	214,957	95

Sources: (see EIS [Volume 7](#): Resource Use). Number of meals of meat obtained from domestic harvest on an annual basis by NCN members. Harvest data were obtained from the NCN Harvest Calendar (August - May, 2001) and Country Foods Program (average of 1990-2000 data).

Notes:

1. Combined data from Country Foods Program (average of 10 years of data) and the Harvest Calendar (collected from August 2001 to May 2002).
2. One meal of meat is defined as 0.2 kilogram of meat, and all weights are presented as kilograms.
3. Calculated based on the 2000 NCN on-reserve population of 2,258 individuals. Assumes that all members, regardless of age, eat meals of equivalent size.
4. Fish includes: Cisco, Maria, Perch, Pike, Suckers, Walleye, Whitefish, Trout and Roe.
5. Waterfowl includes: Mallards, Black Ducks, Ducks, and Geese.
6. Other Big Game includes: Elk and Deer.
7. Small game includes: Rabbit and Squirrel
8. Trapped species includes: Beaver, Muskrat, and Lynx.

Other bush products also contribute to income-in-kind for the local economy. These include collection of medicinal plant materials, collection and use of furs/hides for crafts (sold commercially and for personal use) and collection of firewood for personal use.

Like commercial resource harvesting in the RMA, the value of the harvested products and the process of obtaining them goes well beyond their nominal value. Even though the number of individuals and families who undertake traditional harvesting has declined in recent decades, the knowledge and use of the land is important to NCN as a community and is central to their culture. Efforts are underway to encourage these types of activities, particularly among youth in the community. (For example, taking youth onto the land has been an element of some programming at both the Wellness Centre and the school) (Interviews with Social Service Providers, personal communication, 2002; Nelson House Education Authority, personal communication, 2001).

2.2.1.2 South Indian Lake

2.2.1.2.1 Labour Force Characteristics

Data on the employment characteristics of South Indian Lake residents were taken from the 1996 Census of Canada.

Potential Labour Force

The potential labour force for South Indian Lake was 515 individuals in 1996. As defined by Statistics Canada, this includes all individuals ages 15 years and older, excluding institutional residents (Statistics Canada 1996).

Active Labour Force

In 1996, the active labour force of South Indian Lake was 210 people. The active labour force is defined by Statistics Canada as the number of people in the total labour force who were either employed or unemployed during the week prior to the Census Day. Typically those persons not considered to be part of the active labour force include students, homemakers, retired workers, seasonal workers in an “off-season” who are not looking for work and persons who cannot work because of a long-term disability or illness (Statistics Canada 1996).

The participation rate of South Indian Lake residents was determined by finding the proportion of the population over the age of 15 that was in the active labour force. In 1996, the participation rate for South Indian Lake residents was 40.8 per cent. By comparison, the provincial participation rate was 65.5 per cent in 1996 (Statistics Canada 1996).

Employment

Individuals considered employed work for pay or are self-employed on either a part-time or full-time basis. In 1996, the employment rate for South Indian Lake residents was 69.0 per cent, as compared to 89.9 per cent provincially (Statistics Canada 1996).

The below [Table 2.32](#) indicates that fishing and trapping industries were the largest employers in the community of South Indian Lake in 1996. According to Census of Canada data, one-quarter of South Indian Lake residents were involved in the fishing and hunting industry in 1996. Government and educational services were also important industry divisions for employing South Indian Lake residents (Statistics Canada 1996).

Table 2.32
Employment Statistics by Industry Division for South Indian Lake: 1996

Industry Division	Number / Percentage of Individuals
Fishing and trapping industries	50 (25%)
Transportation and storage industries	10 (5%)
Communication and other utility industries	10 (5%)
Retail trade industries	20 (10%)
Government service industries	30 (15%)
Educational service industries	35 (18%)
Health and social service industries	15 (8%)
Accommodation, food and beverage service industries	15 (8%)
Other service industries	10 (5%)
Total – All industries	200

Source: Statistics Canada 1996 Census of Canada – 20% Data

Note: Columns may not add due to rounding.

Unemployment

Unemployment is determined by calculating the percentage of people in the active labour force that are not employed but are currently looking for work (Statistics Canada 1996).

In 1996, the unemployment rate for South Indian Lake residents was 31.0 per cent. This was more than three times greater than the provincial unemployment rate, which was 10.1 per cent in 1996 (Statistics Canada 1996).

Education and Training

According to 1996 Census of Canada data, South Indian Lake had a relatively low average level of education, with a third (33 per cent) of residents 15 years of age and older having less than a Grade 9 education, and 9 per cent with some university education. In Manitoba, approximately 13 per cent of the population had less than a Grade 9 education, and nearly a quarter (23 per cent) had some university education in 1996 (Statistics Canada 1996).

Table 2.33
Highest Level of Education for South Indian Lake: 1996

Level of Education	1991 Statistics Canada ^{1,2} (Total=415)	1996 Statistics Canada ^{1,2} (Total=515)
Less than Grade 9	47%	33%
Grades 9 to 13:	41%	49%
• Without Secondary School Graduation Certificate	37%	45%
• With Secondary School Graduation Certificate	4%	4%
Trades Certificate or Diploma	0%	2%
Other Non-University Education Only	7%	7%
• Without Certificate Or Diploma	2%	2%
• With Certificate Or Diploma	5%	5%
University:	2%	9%
• Without Degree	2%	7%
• With Bachelor's Degree or Higher	0%	2%

Sources:

1. Statistics Canada Census of Canada 1991, 1996

Notes:

1. Only 20% sample data.

2. Totals may not add due to rounding.

2.2.1.2.2 Income Levels and Sources

The most recent income data available were from the 1996 Census of Canada. The following outlines average annual personal income, family income and household income for South Indian Lake residents.

Personal Income in South Indian Lake

Annual personal income is the average annual income earned per person. In 1996, the average annual personal income for South Indian Lake residents was approximately \$11,248. The provincial average annual personal income in 1996 was approximately \$22,667 or about double the personal annual income for South Indian Lake residents. In 1996, nearly 60 per cent of the individuals in South Indian Lake earned less than \$10,000 per year (Statistics Canada 1996).

Table 2.34
Average Personal Income and Distribution of Income in
South Indian Lake and Manitoba: 1996

Personal Income (\$\$)	South Indian Lake (Total number of individuals =480)	Manitoba
Under \$10,000	57%	29%
\$10,000 - \$19,999	22%	26%
\$20,000 - \$29,999	10%	17%
\$30,000 - \$39,999	4%	12%
\$40,000 - \$49,999	4%	7%
\$50,000 - \$59,999	2%	4%
\$60,000 and over	0%	4%
Average Personal Income	\$11,248	\$22,667

Source: Statistics Canada 1996 Census of Canada – 20% Data

Note: Columns may not add due to rounding.

Family Income in South Indian Lake

Annual family income is defined as the amount of income earned by a family, where family is defined as a married or common-law couple living together, with or without never-married sons or daughters; or a lone parent living with at least one-never married son or daughter (Statistics Canada 1996).

In 1996, the average annual family income in South Indian Lake was approximately \$28,555, or about 45 per cent lower than the provincial average annual family income of \$50,263 (Statistics Canada 1996).

Table 2.35
Average Family Income and Distribution of Income
in South Indian Lake and Manitoba: 1996

Family Income (\$\$)	Number of Families (Total number of families = 165)	Manitoba
Under \$10,000	12%	5%
\$10,000 - \$19,999	27%	11%
\$20,000 - \$29,999	27%	15%
\$30,000 - \$39,999	18%	14%
\$40,000 - \$49,999	9%	13%
\$50,000 - \$59,999	0	12%
\$60,000 - \$69,999	0	9%
\$70,000 - \$79,999	6%	7%
\$80,000 and greater	0	15%
Average Family Income:	\$28,555	\$50,263

Source: Statistics Canada 1996 Census of Canada – 20% Data

Note: Columns may not add due to rounding.

Household Income

Annual household income is defined as the amount of income earned by all persons living in the household (Statistics Canada 1996).

The average household income in South Indian Lake was approximately \$32,816 in 1996. The average annual household income for the province was approximately \$43,404 in 1996 was about 30 per cent greater than the average household income in South Indian Lake (Statistics Canada 1996).

Table 2.36
Average Household Income and Distribution of Income in
South Indian Lake and Manitoba: 1996

Household Income (\$\$)	Number of Households (Total number of households = 160)	Manitoba
Under \$10,000	6%	8%
\$10,000 - \$19,999	22%	19%
\$20,000 - \$29,999	28%	15%
\$30,000 - \$39,999	16%	14%
\$40,000 - \$49,999	13%	12%
\$50,000 - \$59,999	9%	10%
\$60,000 - \$69,999	0	7%
\$70,000 - \$79,999	0	5%
\$80,000 - \$89,999	6%	4%
\$90,000 and greater	0	7%
Average Household Income	\$32,816	\$43,404

Source: Statistics Canada 1996 Census of Canada – 20% Data

Note: Columns may not add due to rounding.

2.2.2 Nelson House Businesses

On-reserve businesses in Nelson House fall into three general categories:

- Business owned and operated by the NCN Development Corporation
- Other businesses wholly or partially owned by NCN, and
- Private businesses.

Businesses in each of these categories are discussed below.

2.2.2.1 Businesses Owned and Operated by the Nelson House Development Corporation

The Nelson House Development Corporation employs six people and is responsible for managing funds from the OT Trust⁸, developing and/or purchasing local businesses and operating these businesses. In addition to managing four local businesses, the Development Corporation assists individuals with advice and business plans to start-up their own businesses (NCN Development Corporation, personal

⁸ The OT Trust is a \$2.9 million trust established as compensation for domestic fishing losses as a result of the Churchill River Diversion.

communication, 2001; Lederman Consulting 2000). It will also finance individual business equity loans to help leverage loans from the banks (Linklater 2000).

The overall goal of the Development Corporation is to keep money in Nelson House. They want to be a part of helping the community develop a sustainable, self-reliant economy (NCN Development Corporation, personal communication, 2002).

The Development Corporation receives annual funding from INAC, as well as half of the interest revenue earned on the OT Trust (the remaining interest revenue is distributed to NCN members). Revenues from the Development Corporation's business investments are used to reinvest in current businesses and to buy new businesses (NCN Development Corporation, personal communication, 2002).

Current business investments include:

- Meetah Building Supplies and General Contractors
- Family Foods (formerly Lucky Dollar Foods)
- Notigi Portage Outfitters and Restaurant, and
- Othowin Gas.

Each of these businesses are discussed below.

In the future, the Development Corporation will be taking over responsibility for the NCN Communications Corporation, a business currently owned and operated by NCN. They are also looking to build a restaurant complex in Nelson House that houses a restaurant, travel agency and, eventually, the Family Foods store. This complex is to be located beside the Nisichawayasihk Noyo Ohtinwak Collegiate and is scheduled to be built in spring 2002. They have also started to put together plans for an on-reserve insurance company to insure band-owned CMHC houses and in-house appliances (contents insurance for tenants would not be available.) They have already received funding from the NCN Trust to start developing this company and are putting together a business plan to apply for additional funding from INAC. Other future plans include the possibility of an on-reserve bank (NCN Development Corporation, personal communication, 2002).

Figure 2.24
The Nelson House Development Corporation



2.2.2.1.1 Meetah Building Supplies and General Contractors

Meetah Building Supplies and General Contractors is a five-year old lumber supply and construction company located on-reserve that currently employs nine full-time staff members. In addition to supplying lumber, Meetah also manufactures doors and kitchen cabinets and supplies furnaces, appliances and furniture (primarily beds) for residents of Nelson House. A local procurement policy requires the NCN Housing Authority to purchase all of their building supplies from Meetah, provided the cost is reasonable. In addition, NCN Social Assistance purchases beds and appliances through Meetah for their clients. Meetah has also provided supplies to Norway House and Lac Brochet and are currently waiting to hear if new contracts with Oxford House and Lac Brochet have been approved (NCN Development Corporation, personal communication, 2002).

In the last three years, Meetah has also started to provide general contracting services. Since this time, they have constructed about one-quarter of homes built in the community (NCN Development Corporation, personal communication, 2002).

Meetah places emphasis on building local capacity and skills so that money earned through contracting stays in the community. Their goal is to reduce the community's dependence on outside contractors by providing training and experience opportunities for Nelson House residents. In total, Meetah has trained 23 people from Nelson House in cabinet-making and carpentry. Through a joint venture program with NCN Human Resources, qualified instructors have been hired so that those in apprenticeship programs

were able to use this training for certification (NCN Development Corporation, personal communication, 2002).

The company also offers training opportunities to other communities. Training is provided in one of three ways:

- On-reserve in Nelson House at Meetah's facilities using a trainer from Winnipeg.
- Organized and provided by a trainer in Winnipeg.
- Organized and provided in the community by a trainer from Winnipeg (NCN Development Corporation, personal communication, 2002).

On an annual basis, Meetah's sales averaged \$1 million and \$2 million. Revenues from the corporation are either reinvested in the business or are used by the Development Corporation to fund existing businesses or purchase new businesses (NCN Development Corporation, personal communication, 2002).

In the future, Meetah would like to expand its business into Thompson and are currently working on a funding proposal to undertake the necessary feasibility studies for this expansion. Their interest in Thompson stems from requests they have received to provide building supplies to other communities, as well as the increased access a Thompson location would provide to Aboriginal political organizations (e.g. Manitoba Keewatinowi Okinmakinak (MKO) and the Keewatin Tribal Council) (NCN Development Corporation, personal communication, 2002).

2.2.2.1.2 Family Foods

Originally operated by the Band, the operation of Family Foods was handed over to the Nelson House Development Corporation about three years ago. In the last year, the name of the store changed from Lucky Dollar Foods to the current Family Foods, as a result of a change in suppliers.

The store employs four full-time and two part-time staff. Staff turnover is a problem, with employees generally working two to three months before quitting. This has created some problems because it means new employees are constantly being trained and there is little in the way of staff continuity (NCN Development Corporation, personal communication, 2002).

Family Foods does have experience supplying food for construction and firefighting crews. For the last three years, they have provided food for an average of 30 to 40 firefighting crews with five men in each crew. They also provided all of the food for those working on the Mile 20 pilot road for the proposed Wuskwatim Generating Station project, and all of the food for those who completed the Mile 17 road centreline for this same project. The company has enjoyed taking on these types of contracts and is interested in doing more of this work in the future (NCN Development Corporation, personal communication, 2002).

2.2.2.1.3 Notigi Portage Outfitters and Restaurant

Notigi Portage Outfitters and Restaurant is located at Notigi and includes a restaurant, gas station, three rental cabins and outfitting services for moose and bear hunting, and fishing. The restaurant, gas station and cabin rentals are available year-round. Outfitting services are offered from spring to fall. Currently, the company has five non-resident moose licenses, nine non-resident bear licenses and three non-

resident fishing licenses. In 2001, the first year during which outfitting services were provided, the company hosted four hunters – two from Kansas and two from Michigan.

2.2.2.1.4 Otohowin Gas

Otohowin Gas is a gas bar and convenience store located on-reserve and was the first business started by the Development Corporation. Otohowin has five employees and has sales of approximately \$1 million per year.

Figure 2.25
Otohowin Gas



2.2.2.2 Other Businesses Wholly or Partially Owned by NCN

Business wholly or partially owned by NCN are discussed below and include:

- Nelson House Forest Industries (wholly-owned)
- NCN Communications Corporation (wholly-owned)
- NCN Gaming Commission (wholly-owned)
- Mystery Lake Hotel (wholly-owned)
- Footprint Engineering (partially-owned)

2.2.2.2.1 Nelson House Forest Industries

Nelson House Forest Industries (NHFI) is an NCN-owned operation which provides construction services, road maintenance, and general contracting for projects in Nelson House and the surrounding area. NHFI is also involved in logging operations in northern Manitoba. In the last three years, the proportion of NHFI's work that has been devoted to heavy construction versus forestry is as follows:

- 2000/2001: 90 per cent heavy construction, 10 per cent logging
- 1999/2000: 60 per cent heavy construction, 40 per cent logging
- 1998/1999: 80 per cent heavy construction, 20 per cent logging

The types of work undertaken by NHFI include:

- Sewer and water projects on-reserve
- Gravel hauling
- Bulldozer and other heavy equipment rentals, including to the Leaf Rapids mine prior to its closure
- Certified vehicle inspections of trucks and Band-owned vehicles (e.g. water trucks, semis and buses)
- Soil reclamation (in 2001, they completed a \$500,000 soil reclamation project at the Medicine Lodge in Nelson House), and
- Logging (amounts vary depending on the contracts NHFI is working on) (NHFI, personal communication, 2002).

NHFI started and was incorporated in 1976 with a loan from Manitoba Hydro and a \$1.3 millions contract to do shoreline clearing for Manitoba Hydro. During the 1976 shoreline clearing contract, NHFI had 600 employees on the payroll from all over Canada, distributed among 60 to 70 contractors. After this contract, they went down to 4 staff members for six months, until they deciding to branch out into heavy construction (NHFI, personal communication, 2002).

Currently, NHFI employs 26 full-time employees and four seasonal employees. These include a Manager, Operators, a Mechanic, an Office Manager, a Consultant, a Finance Comptroller, a Supervisor and Labourers.

On an annual basis, NHFI revenues range from \$3 to \$7 million. Although the company is Band-owned, all profits go back into the business. Most of the company's work is within a 150 mile radius of Nelson House; however, they are interested in expanding and would like to become a major player in the region (NHFI, personal communication, 2002).

NHFI has also provided training courses to local residents. In 2001, the company offered training courses for heavy equipment operators and truck drivers. The courses were financed through NCN Human Resources and Employment Insurance. In total, nine enrolled in and six successfully completed the truck-driving course, and nine enrolled in and eight successfully completed the heavy equipment operation course.

Figure 2.26
Nelson House Forest Industries



2.2.2.2.2 NCN Communications Corporation

NCN Communications Corporation is responsible for providing communication services within the community. These include:

- Cable service and maintenance.
- Managing the local public access channel.
- Posting local announcements on the public access channel.
- Broadcasting nightly bingos on the public access channel.
- Developing and delivering radio programming on the local radio station.

NCN Communications Corporation employs a Manager, Technician and Driver, Radio Announcer and one casual Worker.

Although currently owned and operated by the First Nation, plans are underway for the business to be taken over by the Nelson House Development Corporation.

Figure 2.27
Nisichawayasihk Communications Corporation in Nelson House



2.2.2.2.3 Nelson House Gaming Commission

The Nelson House Gaming Commission provides a facility with Video Lottery Terminals (VLT's) for adults living on-reserve. Profits from the Gaming Commission are used to support community projects. Since 1997, distributions from the Gaming Commission have provided funding for the following (Nelson House VLT Program Financial Statements 1997-2000):

- Bereavement and funeral expenses, including the bereavement van
- The Canada Day Festival
- The Casino study
- Children's activities
- The Christmas Cheer Board
- Community festivals
- Conferences
- Cultural activities
- Destitute travel
- Elders' activities
- Equipment purchases
- Fuelwood
- The Justice Program

- The MKO General Assembly
- Miscellaneous programs
- Nelson House Minor Hockey Association
- Nelson House Education Authority
- Recreation Committee
- Remembrance Day activities
- Search and rescue
- Senior Hockey

Figure 2.28
The Nelson House Gaming Commission



2.2.2.2.4 *Mystery Lake Motor Hotel*

NCN bought the Mystery Lake Hotel in Thompson in 1998. The hotel has 69 rooms, a dining room and lounge and the Trapper's Inn bar.

Figure 2.29
Mystery Lake Motor Hotel in Thompson



Source: City of Thompson Web Site

2.2.2.2.5 Footprint Engineering

Footprint Engineering is a partnership between NCN and Tim Nykolouk, Professional Engineer. The firm was created in March 1997 and later incorporated in August 1997. The company provides engineering consulting services to NCN, as well as other northern communities, primarily in the areas of project management, engineering and design, surveying and inspection. Footprint Engineering employs a Professional Engineer, two Civil Engineering Technicians and an Office Administrator.

Figure 2.30
Footprint Engineering in Nelson House



2.2.2.3 Privately-owned Businesses

2.2.2.3.1 Northern Store

The Northern Store is a combination food and general merchandise store owned and operated by the North West Company. Services include grocery, retail, hardware, gas and miscellaneous. In addition, the Northern Store operates the Nelson House Post Office and a Kentucky Fried Chicken/Quick Stop Convenience Store.

The Northern Store employs 15 NCN members.

Figure 2.31
The Northern Store in Nelson House



2.2.2.3.2 Local Contractors

There are a number of small, independent contractors working in Nelson House who primarily provide carpentry, plumbing and electrical services to the NCN Housing Authority and Meetah Building Supplies. The main contractors identified during interviews in Nelson House were:

- Jerry McDonald Construction: largest independent contractor in Nelson House. Constructs houses and undertakes renovations for the Housing Authority.
- Ted's Construction: builds and renovate homes for the Housing Authority.
- F & F Construction: primarily completes finishing work in homes, for example, drywall installation.
- Carson McDonald: carpentry.
- Colin Linklater: carpentry.
- Maheegan: electrical and mechanical contracting.
- Baker Electric: electrical contracting for houses and furnace installations.
- Curtis Spence: journeyman construction electrician. Primarily completes electrical work for local houses and buildings.
- Donnie's Plumbing: plumbing. Undertakes contracts for Jerry McDonald construction.
- Roland's Plumbing: plumbing.
- Moody's Plumbing and Heating: plumbing and Heat Recovery Ventilator (HRV) installations (NCN Development Corporation, personal communication, 2002; NCN Trust Office 2001).

2.2.2.3.3 Otapanask Repairs

Otapanask Repairs is a locally operated repair shop specializing in car and small engine repairs.

2.2.2.3.4 Bear Paw Security Services

Bear Paw Security Services is owned by three NCN members and has its main office in Nelson House and a sub-office in Winnipeg. The company provides on-site security services on a contract basis for events and organizations in Nelson House and Winnipeg, as well as other locations in Manitoba. Bear Paw has trained, on-call staff in both Nelson House and Winnipeg (Bear Paw Security Services, personal communication, 2002).

2.2.2.3.5 Catering

There are about five individuals who organize and provide catering services in Nelson House. These include the operator of the arena canteen, a local member who owns and operates a lunch truck and three individuals who organize catering services out of their homes. All of these operations have on-call workers to help prepare and serve food.

2.2.2.3.6 Confectionaries

A number of local residents operate small confectionaries, or convenience stores, either out of their homes or in facilities on their yards. These stores typically sell soda pop, potato chips, candy and cigarettes. Inventory is purchased from suppliers in Thompson, including R.A. Distributing and Old Dutch Foods, as well as Sobee's, which delivers products to Nelson House confectionaries about every two weeks.

Currently, in Nelson House there are about five of these confectionaries in operation (NCN Development Corporation, personal communication, 2002).

2.2.2.3.7 Local Taxis

There are four local taxis in Nelson House, each operating a single vehicle. These include:

- Mike's Taxis
- Elvis Moody Taxi
- Thomas Spence Taxi, and
- Penner Taxi.

All provide services within the community, as well as to and from Thompson.

2.2.2.3.8 Cree Man Consulting

Cree Man Consulting is a locally owned and operated mineral exploration company that has been in business for about two years. Currently, the company only provides services to the Band, but it is interested in expanding to undertake work for other organizations (Cree Man Consulting, personal communication, 2002).

2.3 BUILT ENVIRONMENT AND COMMUNITY SERVICES

2.3.1 Land

2.3.1.1 NCN Land in the Nelson House RMA

Within the Nelson House RMA, NCN has current and potential reserve land in three general categories:

- Indian Reserve (IR) parcels
- Lands selected through the Treaty Land Entitlement process, and
- Lands selected as part of the 1996 NFA Implementation Agreement of the Northern Flood Agreement signed by NCN, Manitoba Hydro and the provincial and federal governments.

Each of these land types is discussed in detail below.

2.3.1.1.1 Indian Reserve Parcels

Reserve land is land that has been set aside by the federal government for the use and occupancy of a specific First Nation (INAC 2000).

At present, NCN has four Indian Reserve (IR) parcels of land (see Figure 2.32):

- IR 170: the site of the Nelson House Reserve community, this is an 18.6 square kilometre parcel of land located on the northern shore of Footprint Lake.
- IR 170A: a parcel of 11.6 square kilometres of land located to the west on the southern shore of Footprint Lake.
- IR170B: a parcel of 28.3 square kilometres of land located centrally on the southern shore of Footprint Lake.
- IR 170C: located on the northeast shore of Footprint Lake opposite the most easterly part of IR 170. This 0.03 square kilometre parcel of land is used as a cemetery site.

Although today most members live on IR 170, prior to the introduction of centralized community services, Band members resided along the shoreline of the entire reserve in clusters of families travelling along and across Footprint Lake. With the provision of electricity, roads and schooling on IR170, members moved to this location to take advantage of modern amenities. Today the community stretches approximately three miles along Footprint Lake (Hilderman Witty Crosby Hanna and Associates 1983).

A large number of NCN members also live in the Northern Affairs community of South Indian Lake, on the southeast shores of Southern Indian Lake. Members with traditional ties to the land in the South Indian Lake area, such as summer and winter campsites, chose to settle in South Indian Lake during the 1920s rather than settling in Nelson House. At present, members living in South Indian Lake do not have a reserve and reside on Crown and private land (Hilderman Witty Crosby Hanna and Associates 1983). However, NCN members living in South Indian Lake are in the process of trying to establish their own First Nation, the O-Pipon-Na-Piwin Cree Nation, and associated reserve land.

Figure 2.32
NCN Indian Reserve Parcels



Source: Canadian Department of Energy, Mines and Resources, Surveys and Mapping Branch

2.3.1.1.2 Treaty Land Entitlements

Treaty Land Entitlement (TLE) refers to land owed to certain First Nations under the terms of the Treaties signed by the First Nations and Canada between 1871 and 1910. Each Treaty provided that Canada would provide reserve land to the First Nations based on population size. Under Treaties 1, 2 and 5, 160 acres of land were to be provided to each family of five (32 acres per person). Under Treaties 3, 4, 6 and 10, 640 acres of land were to be provided to each family of five (128 acres per person). However, not all First Nations received their full allocation of land (TLE Committee of Manitoba 2001)

In 1977, the Treaty Land Entitlement Committee of Manitoba Inc. was formed to begin negotiations on behalf of Manitoba First Nations to settle outstanding TLE's with Canada. In 1983, Canada, Manitoba and the TLE Committee began negotiations. On May 29, 1997, the Manitoba Treaty Land Entitlement Framework Agreement was signed by the TLE Committee (representing 20 First Nations), Canada and Manitoba at the Opaskwayak Cree Nation. This Framework Agreement is intended to fulfill Canada's outstanding debt of lands owed to the 20 TLE Committee member First Nations (TLE Committee of Manitoba 2001).

As a signatory to the 1908 adhesion to Treaty 5, NCN is among the 20 member First Nations represented by the TLE Committee. NCN signed their own band-specific Treaty Entitlement Agreement (TEA) in July 1998. Under their TEA, NCN is entitled to select 79,435 acres of Crown land and received a federal payment of \$1,933,017 (TLE Committee of Manitoba 2001).

Currently, NCN is finalizing their land selections. They have three (3) years, as a general time frame, from the signing date of their TEA to complete this process (TLE Committee of Manitoba 2001).

As of January 2003, NCN had selected the sites outlined in Table 2.37 below as partial fulfillment of their outstanding Treaty Land Entitlement. These selections are currently under review by the provincial and federal governments and will need to be approved by these governments before becoming reserve land.

Table 2.37
Treaty Land Entitlement Selection Made by NCN as of January, 2003

Site Name	Site Number	Size in Acres
Parcel W Plan 5965	1 – 2000	10.52
Birch Tree Brook	2 - 2000	598.33
Birch Tree Brook Addition	3 - 2000	400.82
Taskinigup Falls	4 - 2000	1,631.73
Manasan Falls	5 - 2000	186.04
Notigi	6 - 2000	149.74
Notigi Lake	7 - 2000	172.32
Kepuche Lake	8 - 2000	1,424.20
Birch Tree Brook West	9 - 2000	1,031.09
Apeganau Lake	1 - 2001	2066.58
Baldock Lake	2 – 2001	5825.99
Chipewyan Bay	3 – 2001	820.88
Driftwood Rapids to Grindstone Rapids	4 – 2001	1028.35
Gauer Lake	5 – 2001	2246.98
Gauer River	6 – 2001	2338.88
Harding Lake	7 – 2001	1827.71
Leaf Rapids to Gate Falls	8 – 2001	2369.78
Leftrook Lake	9 – 2001	3652.27

Site Name	Site Number	Size in Acres
Mile 20	10 – 2001	1899.18
Moak Lake	11 – 2001	3626.61
Mynarski Lakes	12 – 2001	492.59
Osik Lake	13 – 2001	5195.25
Pakwaw Lake	14 – 2001	4681.33
Reading River	15 – 2001	1171.68
Reserve 170 to Junction	16 – 2001	1043.99
Suwanee Lake	17 – 2001	1718.19
Taskinigup Falls Addition	18 – 2001	300.24
Wapikunno Bay	19 – 2001	4611.38
Wapisu Lake East	20 – 2001	5381.52
Wapisu Lake Southwest	21 – 2001	948.89
Wapisu Lake West	22 – 2001	1852.12
Wuskwatim Brook	23 – 2001	367.03
Wuskwatim Lake North	24 – 2001	1700.93
Wuskwatim Lake Northeast	25 – 2001	312.12
Wuskwatim Lake South	26 – 2001	998.01
Wuskwatim Lake West	27 – 2001	669.89
TOTAL ACRES SELECTED:		64,753.16
TOTAL ACRES STILL TO BE SELECTED:		14,681.84

Sources:

1. January 29, 2003 Manitoba Hydro TLE Acreage Report.

2.3.1.1.3 NFA Compensation Land

The Northern Flood Agreement (NFA) is a 1977 agreement between Canada, Manitoba, Manitoba Hydro, and the Northern Flood Committee (representing five Cree Nations, including NCN). NCN considers the NFA to be a treaty. Among other things, the NFA allowed the Cree Nations and their members to claim compensation for the adverse effects of northern hydro development.

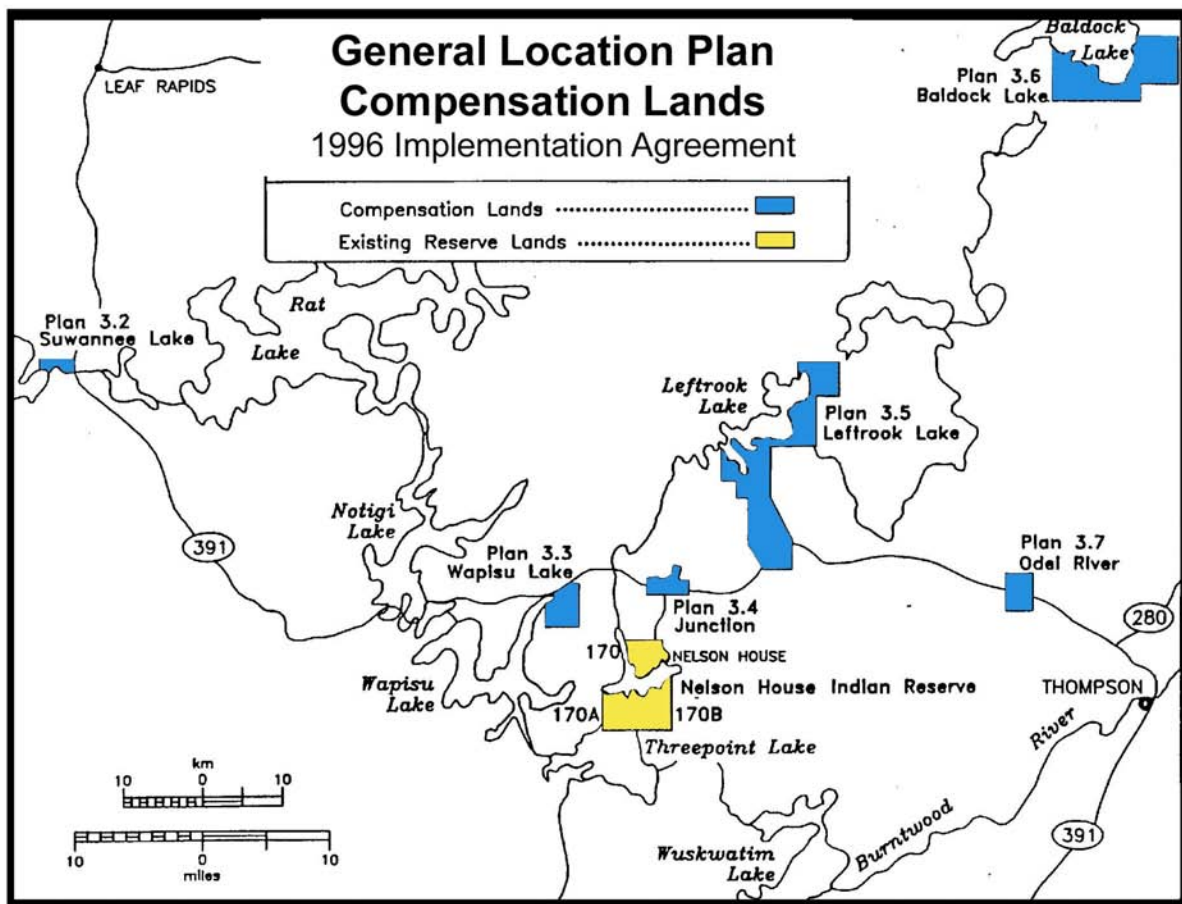
After Manitoba Hydro's Lake Winnipeg Regulation/Churchill River Diversion (LWR/CRD) Projects become fully operational in 1977, shortcomings in the NFA became apparent, particularly with regards to defining and understanding the extent and magnitude of more policy-oriented obligations. Other problems included the structure of the compensation process and the appointment of only a single arbitrator to deal with NFA disputes. The result was a very slow and expensive process for processing claims and arbitrating disputes, which frustrated NCN and others. As such, in the late 1980s, the NFA communities approached Manitoba Hydro and the provincial and federal governments, suggesting an alternative, comprehensive approach to implementing NFA responsibilities.

After hard negotiations between 1992 and 1995, NCN, Canada, Manitoba and Hydro drafted an NFA Implementation Agreement. NCN members voted to accept this new agreement and it was signed in 1996.

Included as part of the 1996 NFA Implementation Agreement were provisions for land. Under the original NFA, NCN was promised at least four acres of good land for every one acre of land in the Nelson House Resource Management Area affected by northern hydro development during the 1970s. Because the NFA took so long to implement, NCN never actually got this land.

The 1996 Agreement, however, provided for about 17 acres of land for every acre of land in the Nelson House Resource Management Area affected by northern hydro development prior to 1996. The 1996 Agreement also indicated which parcels of land would become new NCN Reserve Lands, based on selections made by NCN. As a result, there are currently about 55,000 acres at Baldock Lake, Leftrook Lake, Suwanee Lake, Wapisu Lake, Odei River and near Highway 391 in the process of being converted to NCN Reserve Lands (see Figure 2.33).

Figure 2.33
Compensation Lands Provided to NCN as Part of the
1996 NFA Implementation Agreement

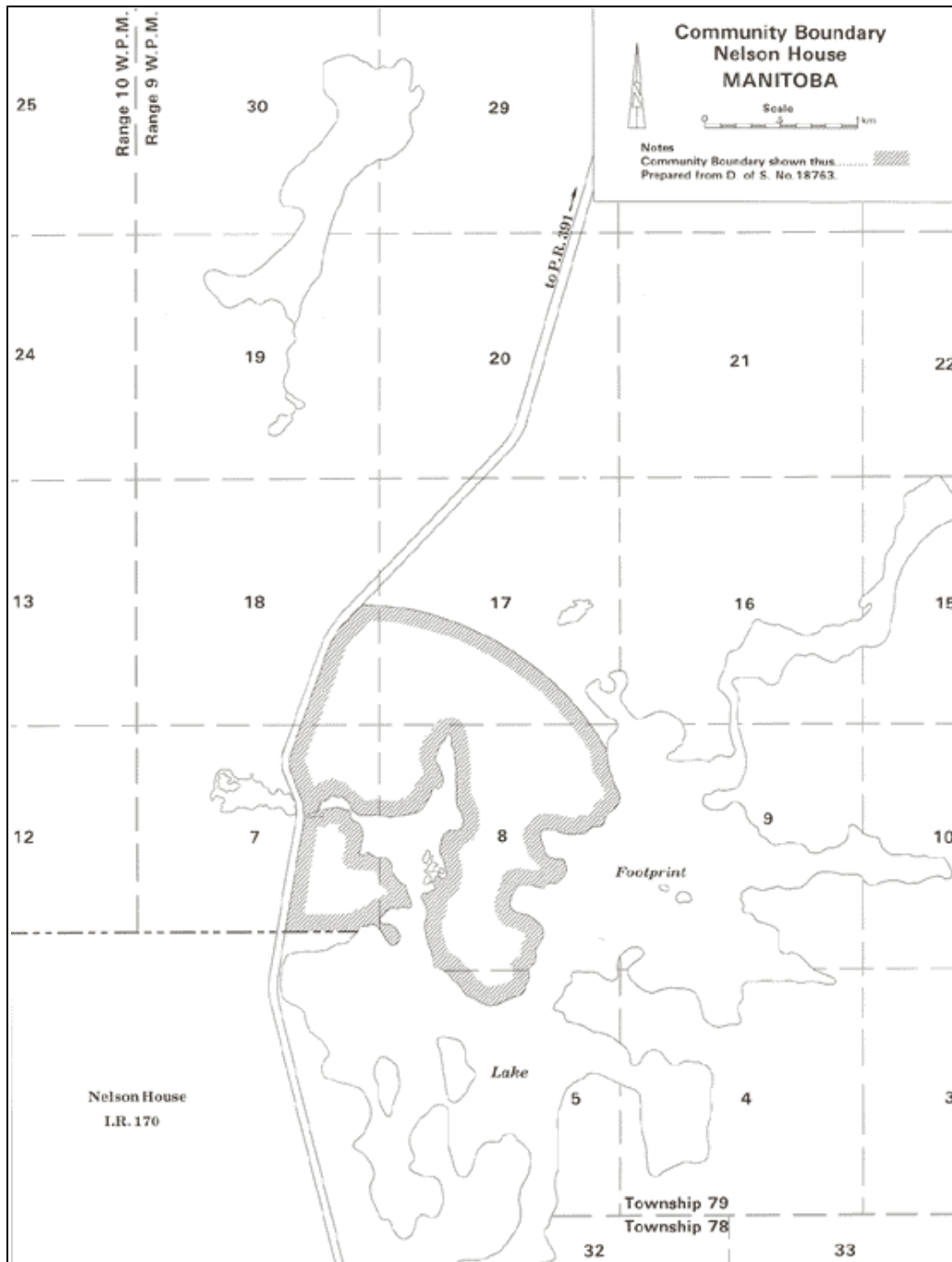


Source: 1996 NFA Implementation Agreement.

2.3.1.2 Nelson House Northern Affairs Community Land

The Nelson House Northern Affairs community lies to the northeast of the reserve community along a bay of Footprint Lake (see Figure 2.34). NCN Members and others living in the community reside on Crown and private land.

Figure 2.34
Nelson House Northern Affairs Community Boundary



Source: Manitoba Rural Development Web site, 2001

2.3.2 Housing

In the late 1980's, NCN gained control over the management of housing in Nelson House and, today, housing is provided by the Nisichawayasihk Housing Authority (NHA). NHA is a band-operated organization responsible for housing in Nelson House. Services include:

- Construction of all new community housing
- Renovation of existing housing
- Emergency housing repairs
- Plumbing and electrical services for homes, and
- Tank cleaning.

The Housing Authority employs six people directly – the Director and Assistant Housing Director, a Carpenter, a Plumber, a Plumber's Assistant and a Secretary.

Band control over housing has meant that the NHA can now develop their own housing designs, use their own materials and suppliers, hire more local contractors and labourers and obtain their own loans for CMHC projects (NHA, personal communication, 2001).

Figure 2.35
The NCN Housing Authority



2.3.2.1 Current Housing Status

At present, there are approximately 393 accommodation units available to NCN members/residents living on-reserve:

- 366 houses
- 17 trailers, and
- 10 apartments (CAIS Report 2002).

Annually, an average of 10 to 20 new residences are added (Lederman Consulting 2000). Three eight-unit multiplexes are currently being constructed and completion is expected in spring 2002. Further plans for 2002/2003 include construction of a six-unit multiplex, two 24-unit apartment complexes and 18 new houses. These are all to be located in the 'new area'. The start of construction is contingent upon the provision of sewer and water services to this area of the community (NHA Board, personal communication, 2002).

The average size of a single-family house in Nelson House is approximately 1,100 square feet with four bedrooms. The age of homes varies:

- Less than one per cent of homes are under a year old
- Twenty per cent of homes are between 1 and 5 years old
- About 80 per cent of homes are between 5 and 20 years old, and
- Less than one per cent are over 20 years old (NHA, personal communication, 2001).

The Housing Program in Nelson House is under-funded and this has resulted in the overcrowding of homes and a backlog of residents waiting for housing. There is an average of eight to ten people per home in Nelson House and about 140 homes have more than one family living in them. At present, there are over 100 families on the waiting list to receive a house, of which three to four per cent are members living off-reserve. Currently, priority is given to members requiring emergency housing, followed by those with medical problems (NHA, personal communication, 2001).

The homes in Nelson House are in various states of repair. If housing repairs are needed, there are three programs available to NCN members:

- Emergency Repair Program: Funded by the NCN Trust, this program provides assistance to members for the replacement costs of plumbing (pumps, hot water tanks, water holding tanks, septic tanks) and mechanical (Heat Recovery Ventilators (HRV), furnaces) systems that are considered essential.
- Residential Rehabilitation Assistance Program: Funded by CMHC, this program offers financial assistance to help repair substandard housing to a minimum level of health and safety (CMHC 2001).
- Home Adaptation for Seniors' Independence: Funded by CMHC, this program helps pay for minor home adaptations to extend the time low-income seniors can live independently in their own homes (CMHC 2001).

There are few abandoned houses in Nelson House, no matter the state of disrepair, given the high demand for and the short supply of available residences (Lederman Consulting 2000). For example, in 2001, only nine houses were vacant and this was because they were under renovation (NHA, personal communication, 2001).

Rent for housing in Nelson House for the year 2000/2001 was approximately \$250 per month for a CMHC unit, provided the tenant was working. For homes owned by the Band or by the NCN Trust, rent was slightly lower at approximately \$200 per month, provided the tenant was working. If the tenant was unemployed, rent was established based on their ability to pay and was deducted from the tenant's social assistance allowance (NHA, personal communication, 2001).

2.3.2.2 Home Ownership

According to the 2002 *Capital Asset Inventory System (CAIS) Report (Draft)*, the three primary owners of homes for NCN members living in Nelson House are the Band, either directly or with loans from the Canada Mortgage and Housing Corporation (CMHC), the NCN Trust and individuals.

Table 2.38 and [Figure 2.36](#) below outline the number of homes owned by each of these entities in Nelson House. In 2002, approximately 279 houses, 17 trailers and 10 apartments were funded by the Band, either directly or through CMHC loans, while 82 homes were owned by the NCN Trust and 5 homes were privately owned (CAIS Report, 2002 (DRAFT)).

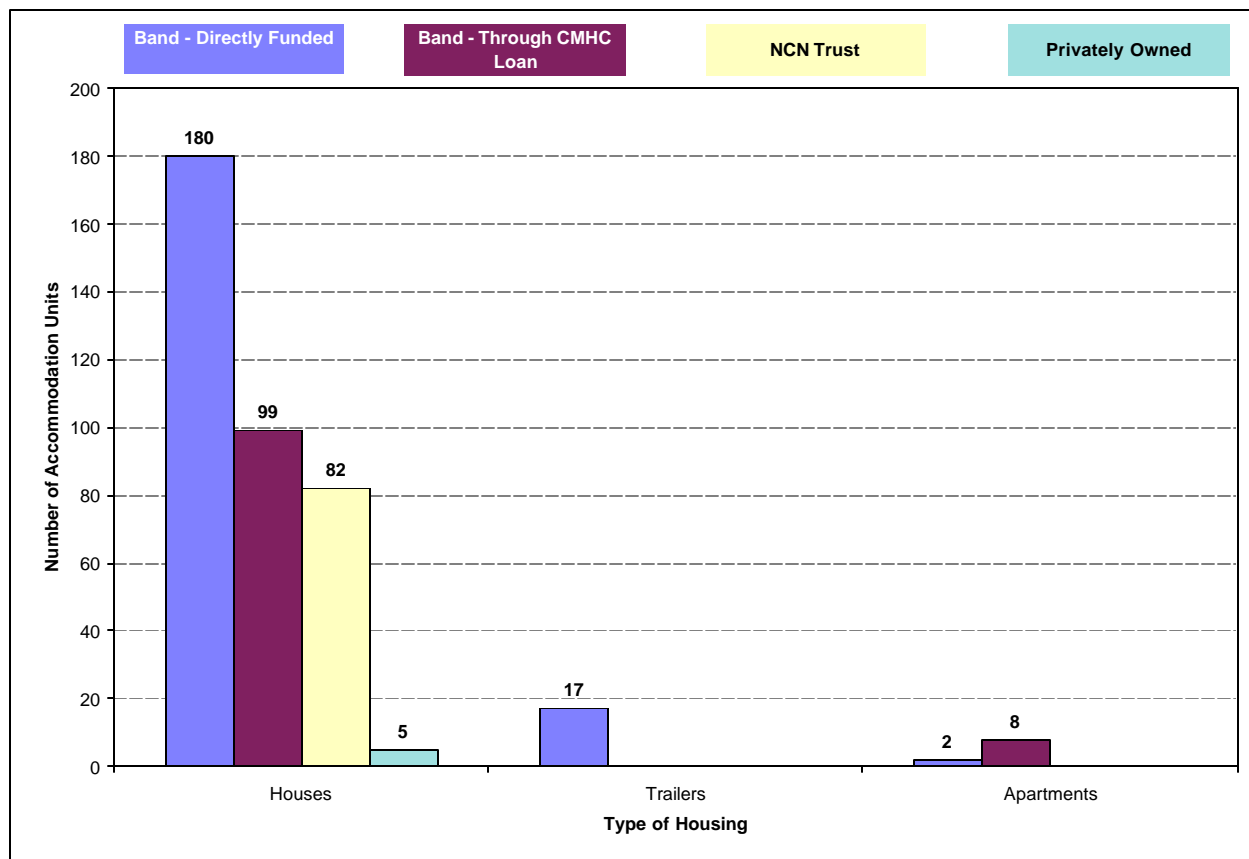
Table 2.38
Housing Ownership Inventory for NCN Members Living in Nelson House: 2002

Type of Housing	Band		NCN Trust Funded	Privately Owned	TOTAL
	Directly Funded	Funded through CMHC Loans			
Number of Houses	180	99	82	5	366
Number of Trailers	17	0	0	0	17
Number of Apartments	2	8	0	0	10
TOTAL	199	107	82	5	393

Source:

1. CAIS Report, Footprint Engineering Inc., draft 2002.

Figure 2.36
Housing Ownership Inventory for NCN Members Living in Nelson House: 2002



Source:

1. CAIS Report, Footprint Engineering Inc., draft 2002.

2.3.2.2.1 NCN Trust Home Ownership Program

The NCN Trust offers a Home Ownership Program for NCN members living in Nelson House. Under this program, members can apply for new housing subsidies to build a personal home. If accepted, a \$38,000 building subsidy is provided to participants, plus an additional \$10,000 for water and sewer service. These subsidies are provided on the condition that the potential homeowner can secure a mortgage of between \$25,000 and \$42,000 from the Royal Bank of Canada to build the new home. The potential homeowner is also required to produce a minimum deposit of \$5,000. In 2002, five individuals in Nelson House owned their own homes as a result of this program and, in 2000, there were four new applicants to the program (NHA, personal communication, 2001).

A home ownership program is also being proposed in the new housing policy, outlined in section 2.3.2.3.2 below.

2.3.2.3 Proposed NCN Housing Policy

The NHA, the body responsible for developing and implementing NCN's Housing Policy, is currently in the process of developing a new Housing Policy for the community. It is anticipated that Chief and Council will ratify this new policy by August of 2002. At present, the NHA is operating under both the Policy

developed in 1995 and the newly proposed Housing Policy. If problems arise, the NHA Board has ultimate authority to determine which Policy should be used in the given situation (NHA, personal communication, 2001).

The new Housing Policy has been developed to address housing issues in Nelson House in a more comprehensive way. It outlines the vision of the NHA, as well as guidelines and procedures for developing and managing housing in Nelson House. Under this new Policy, key goals and objectives of the NHA are to:

- Establish and maintain an ongoing Housing Program which is self-sustaining and responsive to the needs and aspirations of NCN membership.
- Alleviate the present housing backlog by providing alternate modes of housing, such as apartments and duplexes.
- Encourage tenant ownership of existing homes.
- Ensure the provision of good quality housing on-reserve by the adoption and enforcement of the National Building Code of Canada and its amendments.
- Provide information about available Housing Programs and assist members in making applications to these programs.
- In the future, the NHA will be looking at having their own building code (self-government).

The proposed Housing Policy also details the housing selection process and appeals, inspection requirements and code compliance, NHA's Housing Program, the Rental Purchase Program, rental unit renovations, loan programs, collection and default programs, and new construction.

2.3.2.3.1 Proposed Housing Selection Process

Under the proposed Housing Policy, the NHA has developed a comprehensive selection process for allocating housing to its members. To be eligible, a person must be a Member, and 18 years or older. A verification of income would be undertaken by the NHA upon completion of an application for tenancy to verify employment and wages, and debts and payments.

Upon verification of the application for tenancy, the proposed process sets out the following factors that are considered in the selection process:

1. Need, which is to be characterized by:
 - A lack of permanent residence.
 - Living in an emergency shelter unit.
 - Overcrowding (the number of families living in a house or a large family with children of legal age and under).
 - Condition of current house (e.g. make-shift house).
 - Wanting to relocate back to the reserve (on-reserve members are given priority over off-reserve members).
 - Living in below standard housing off reserve.
2. Ability to pay, which means the amount of money the applicant has available to pay toward shelter costs.
3. Capability to pay, which means the applicant's record of loan retirement. Does the applicant meet his/her loan commitments?

4. Full disclosure of an applicant's circumstances relevant to the application.

In addition to the above, the proposed housing selection process also requires the NHA to attempt to interview all applicants when making housing allocation decisions.

The proposed housing policy provides an appeal mechanism pertaining to any decisions regarding loans and rental allocation.

2.3.2.3.2 Proposed Rental Purchase Program

A new Rental Purchase Program to be offered by the NHA is outlined in the proposed Housing Policy. Under this program, homes constructed by the NHA after May 1, 1984 and which meet NCN standard or are deemed feasible for repair, would be available for purchase by their occupant after they have lived in the home for a minimum of one year and made all of their rental payments. If the occupant chooses to purchase the home, the purchase price would be the total cost of construction minus accumulated rental payments (for consecutive 12 months) and an initial, one-time NCN contribution of \$37,500.

The Rental Purchase Program also features rewards for households that make their payments on a regular basis. If a renter/owner makes uninterrupted payments each year, when fifty per cent of the mortgage has been paid, the homeowner can apply for forgiveness on the purchase agreement for up to one-half of the purchase price. For example, if a renter/owner with a twenty-year mortgage makes uninterrupted payments for 10 years (120 payments of \$250.00 each), the remainder of the mortgage could be forgiven.

2.3.2.3.3 New Housing Loan Program

The new NHA policy also outlines a new Housing Loan Program. The purpose of this program is to provide assistance to members, both financially and technically, to purchase or construct a new home on-reserve. Under this program and in addition to the NCN Trust Home Ownership Program, the NHA would fund the Revolving Fund Loan for NCN members. Members who receive a Revolving Fund Loan would have to repay the loan in full plus six per cent interest calculated on July 1st of each year.

2.3.2.3.4 Renovations Loans

For NCN members who do own their homes, there are also two additional types of loans available which, if taken, are added to the total mortgage:

- A Renovations Loan, under which Members may borrow up to \$10,000 on a one-time basis to renovate their homes.
- An Emergency Repairs Loan made available to homeowners for the replacement costs of plumbing (pumps, hot water tanks, water holding tanks, septic tanks) and mechanical (Heat Recovery Ventilator (HRV), furnaces) systems.

2.3.3 Water and Sewer Services

Nelson House drinking water comes from Footprint Lake and is treated on-reserve at the water treatment plant. This treatment plant was constructed in 1985 and upgraded in 1986. The water supply is not fluorinated. In the past, water samples were collected weekly from various sites in the system and tested

to ensure the safety of the water supply. In recent years, the introduction of new government regulations that require the First Nation to bear the cost of lab consultations has meant that water testing has not been performed on a regular basis (Lederman Consulting 2000).

There are two types of water service for homes in Nelson House:

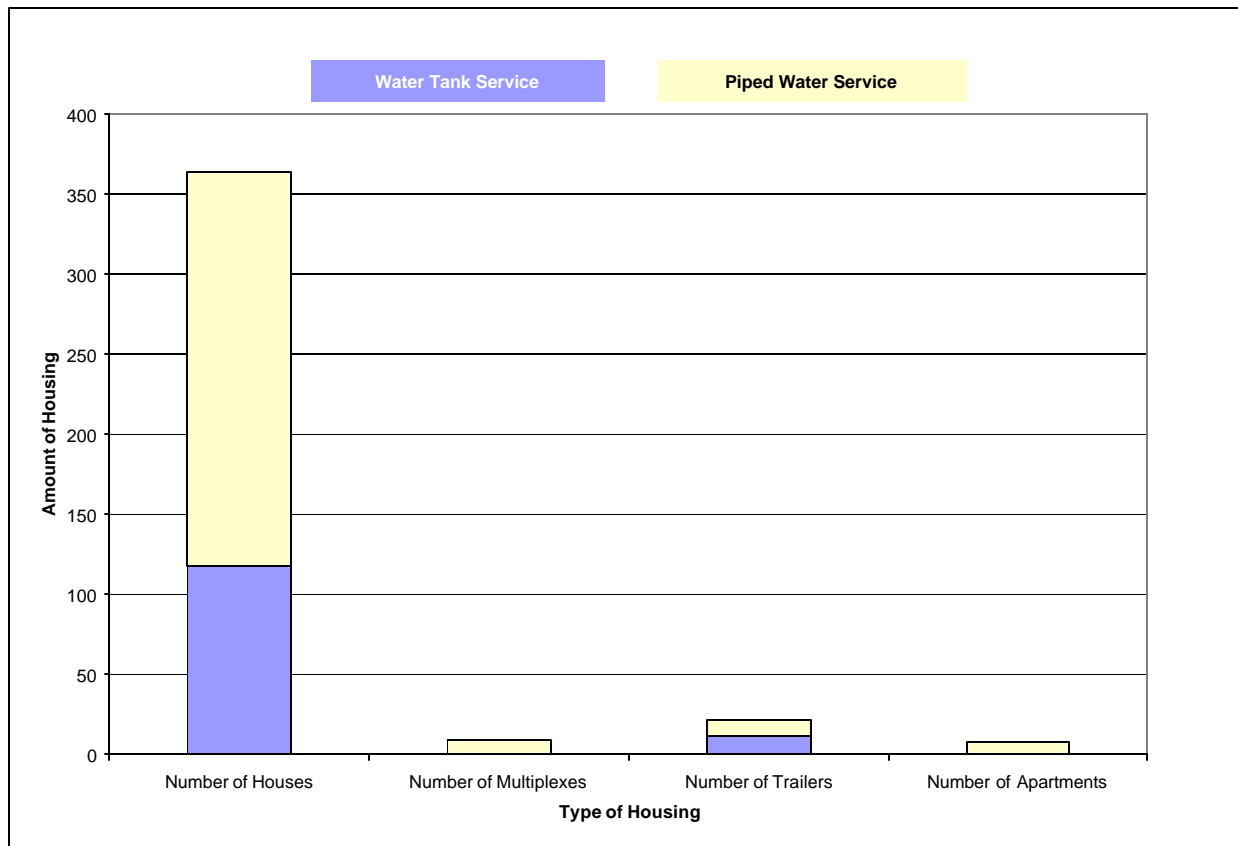
- a. Water piped to the home, and
- b. Water stored in water tanks near the home.

Piped water service is primarily available in Hillside, New Area, Westwood and Bay Road. In total, approximately 68 per cent of Nelson House residents have piped water service. The remaining 32 per cent of Nelson House residents have water tanks, a service found primarily in R.C. Point, Dog Point and parts of Bay Road. Water is delivered to individual tanks via five water trucks owned and operated by NCN.

To handle sewage disposal, the reserve uses a lagoon system, through a combination of piped and trucked systems. Houses with piped water service also have piped sewer service. Similarly, those with water tanks have trucked sewer service. The First Nation owns and operates four pump-out trucks (Lederman Consulting 2000).

[Figure 2.37](#) below illustrates the number and type of homes in Nelson House which received piped water and sewer services and those which received water tank and trucked sewer services in 2001. About two-thirds of the houses, fifty per cent of the trailers and all of the apartments and multiplexes in the community received piped water and sewer services.

Figure 2.37
Household Water and Sewer Services Available in Nelson House
by Type of Accommodation: 2001



Source:

1. CAIS Report, Footprint Engineering Inc., 2001.

2.3.4 Electricity

Manitoba Hydro provides electricity to Nelson House and every home in the community has electricity. The majority of houses are heated with electricity and a few have alternative heating facilities that either use wood exclusively, or supplement with wood heat (NHA, personal communication, 2001; Lederman Consulting 2000).

2.3.5 Telephone

Homes in Nelson House have access to single-party telephone service provided by Manitoba Telecom Services (MTS). Currently, information is unavailable on the number of homes that have telephone service. It is known, however, that not every home in Nelson House has telephone service. The NHA, over the next year, will be working on developing a database which will allow them to determine and track the number of homes with telephone service (NHA, personal communication, 2001)

2.3.6 Community Roads

Table 2.39 below indicates the age and quality of roads in Nelson House, as of 2001. Most roads in the community were built in the 1970's and 1980's and range in quality from poor to average. While some areas have better roads, for example R.C. Point and some parts of the New Area, even these rank as only average in quality. Poorer quality roads are found in Hillside, Dog Point, Westwood and Bay Road.

Table 2.39
Age and Quality of Community Roads: 2001

Road	Area	Year Road was Made	Quality (1 – Poor Quality) (10 – Excellent Quality)
Teal	Unknown	Unknown	5
Sawmill	Unknown	Unknown	Unknown
Trout	R.C. Point	1985	5
Goldeye	R.C. Point	1985	5
Perch	R.C. Point	1985	4
Pickeral	R.C. Point	1985	4
Pike	R.C. Point	1985	5
Mallard	R.C. Point	1985	5
R.C. Point	R.C. Point	1970	6
Hillside	Hillside	1985	4
Tundra	Hillside	1988	3
Forest	Unknown	1980	3
Dog Point Road	Dog Point	1970	4
Caribou	Dog Point	1970	4
Martin	Dog Point	1970	5
Wolf	Dog Point	1970	3
Beaver	Dog Point	1970	3
Lynx	Dog Point	1970	3
McDonald	New Area	2000	5
Poplar	New Area	1975	3
Spence	New Area	1998	5
Tamarack	New Area	1980	3
Linklater Road	New Area	1997	5
Primrose Drive	New Area	1997	5
Wood Point	New Area	1997	5
School Road	Westwood	1982	4
Westwood	Westwood	1980	4
Mountain	Westwood	1988	3
Birch	Bay Road	1975	3
Bay Road	Bay Road	1975	3

Road	Area	Year Road was Made	Quality (1 – Poor Quality) (10 – Excellent Quality)
Jackpine	Bay Road	1980	4

Source:

1. CAIS Report, Footprint Engineering Inc., 2001.

2.3.7 Education Facilities and Services

In September of 1981, NCN assumed control over education in Nelson House by agreement with the Department of Indian and Northern Affairs. In May 1982, the Nelson House Education Authority (NHEA) was granted authority by NCN Chief and Council for the management and administration, as well as leadership and direction, of all educational matters on-reserve (NHEA Policies 202 and 204, 1992).

The NHEA is governed by an elected School Board. Board members are elected by the community for two-year terms. They are expected to represent community members in determining local education plans and policies and establishing publicly endorsed goals and objectives for education (NHEA Policy 105, 1992).

Figure 2.38
The Nelson House Education Authority is located in the
Alice Moore Education Centre in Nelson House



Primary school students in Nelson House attend Otetiskiwin Kiskinwamahtowekamik ('Footprint School'), which offers Kindergarten to Grade 8 education. Those in secondary school attend the newly named Nisichawayasihk Neyo Ohtinwak Collegiate, which offers S1 (grade 9) to S4 (grade 12) education. Year round education was introduced in August 1994 with the twin objectives of increasing attendance and decreasing the drop-out rate. The school program eliminates long summer breaks and replaces them with a number of shorter breaks throughout the year. Intersession offers courses for students needing to upgrade specific areas of the curriculum (Lederman Consulting 2000).

Together, both schools employs 36 Teachers, 17 Teacher Assistants, a Librarian, a Guidance Counselor, a Principal, two Vice Principals (one for elementary school and one for high school), 2 Secretaries and 5 Custodial/Maintenance Workers.

Figure 2.39
Otetiskiwin Kiskinwamahtowekamik in Nelson House



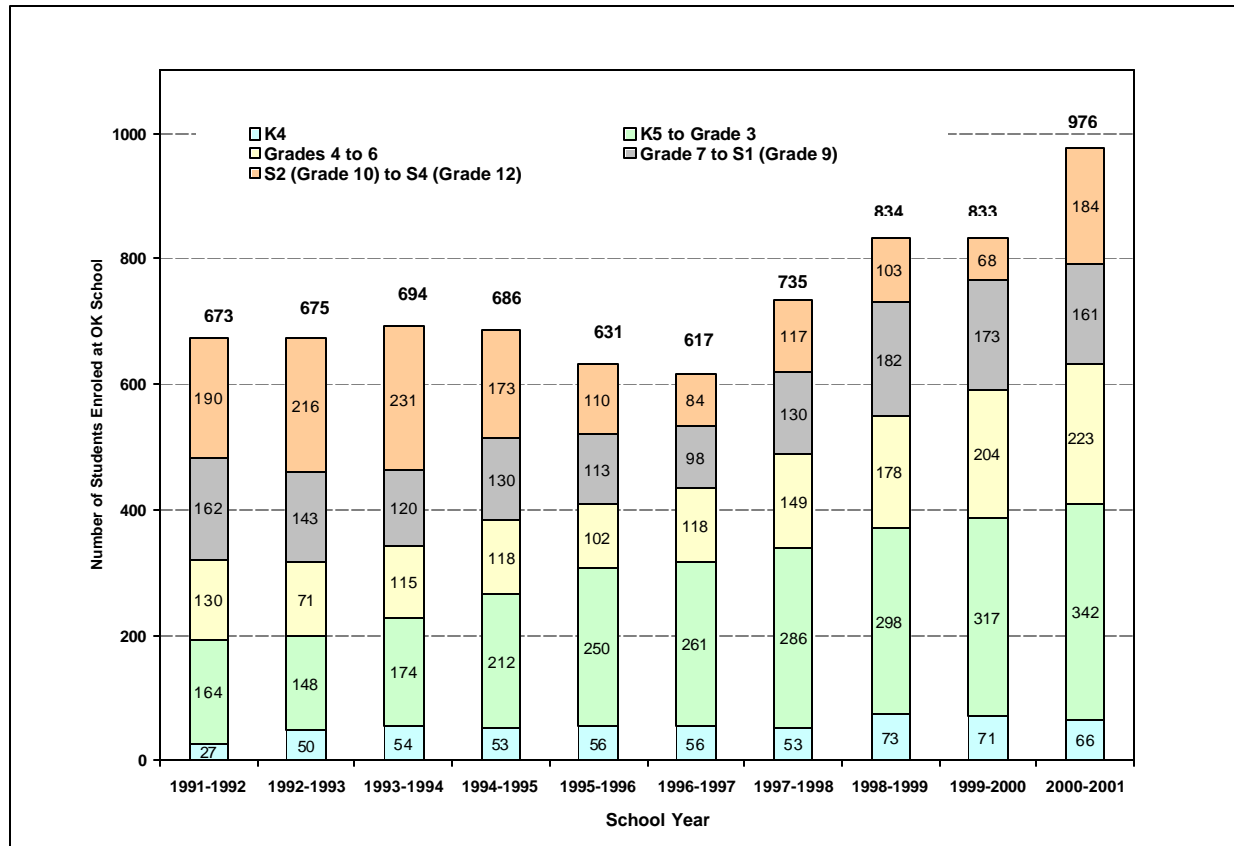
2.3.7.1 Enrolments On- and Off-reserve

Enrolment for the 1991-1992 to the 2000-2001 school years was obtained from the INAC Nominal Roll Report. The data provided show enrolments on-reserve at Otetiskiwin Kiskinwamahtowekamik (O.K. School, which at the time served all grade levels), as well as off-reserve at other schools within the Province, including R.D. Parker Collegiate in Thompson.

2.3.7.1.1 Enrolment On-Reserve at Otetiskiwin Kiskinwamahtowekamik

According to INAC records, enrolment at O.K. School increased from 673 students in 1991-1992 to 976 students in 2000-2001. [Figure 2.40](#) below indicates that the bulk of this increase occurred in the lower grade levels (K4 to Grade 6). Enrolments for Grade 7 upward dropped sharply in the mid-1990's, but appear to be recovering.

Figure 2.40
Enrolment at OK School in Nelson House: 1991-1992 to 2000-2001 School Years



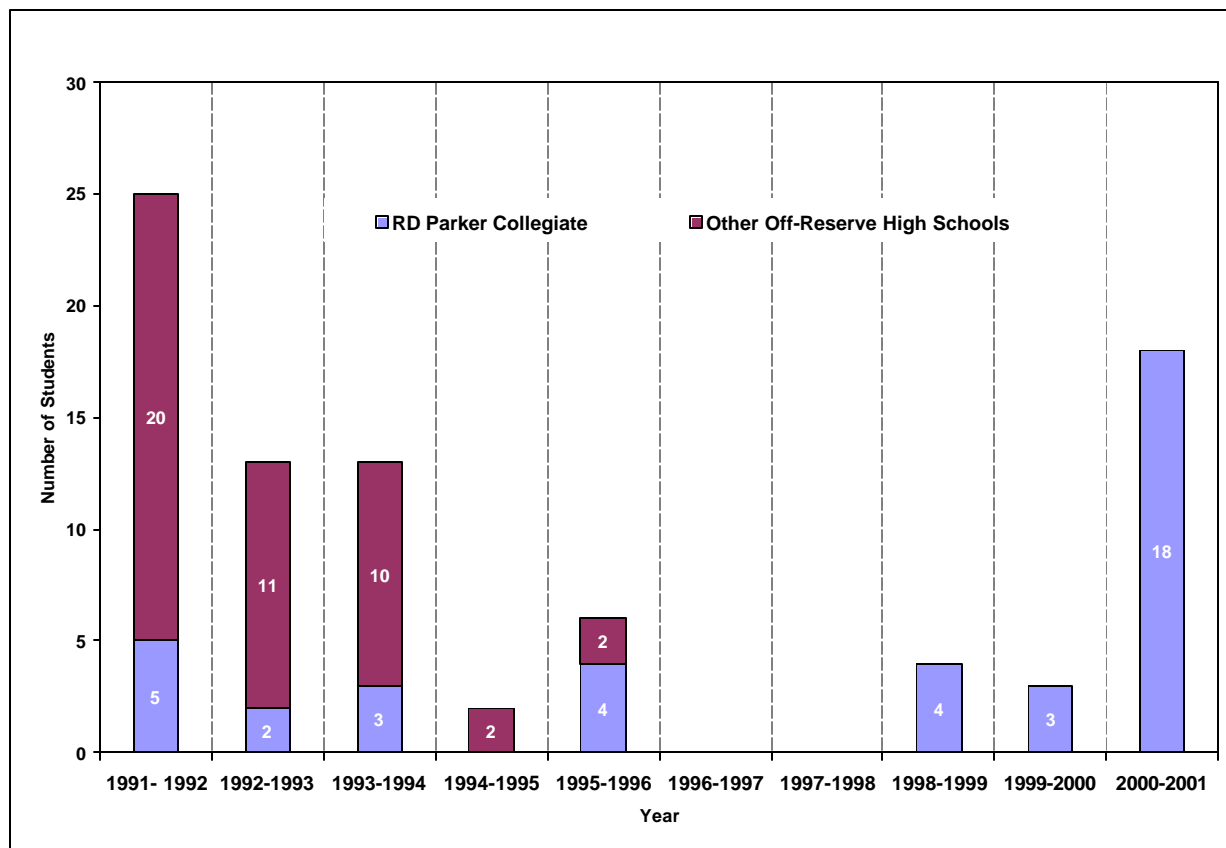
Source:

1. INAC Nominal Roll Report – 1991-1992 to 2000-2001.

2.3.7.1.2 Enrolment at Schools Off-Reserve

Enrolment of NCN members at schools off-reserve was also available through the INAC Nominal Roll Report. From 1991-1992 to 2000-2001, all of the members enrolled off-reserve were in high school and, of these, the largest proportion were in S4 (or Grade 12). Figure 2.41 indicates that enrolment off-reserve was high in the early 1990s, decreased to zero in the 1996-1997 and 1997-1998 school years and started to increase again in the 1998-1999, 1999-2000 and 2000-2001 school years. The 2000-2001 school year saw a record number of NCN students attending R.D. Parker Collegiate in Thompson. In recent years, most of the students enrolled at schools off-reserve attended R. D. Parker Collegiate. In the past, however, enrollments off-reserve also occurred in other communities – primarily Winnipeg, but also Leaf Rapids, The Pas, Argyle, Erickson, Brandon and Caronport, Saskatchewan.

Figure 2.41
Enrolment of NCN Members at Off-Reserve Schools: 1991-1992 to 2000-2001 School Years



Source:

1. INAC Nominal Roll Report – 1991/1992 to 2000/2001.

Notes:

1. Other off-reserve schools include: Daniel McIntyre Collegiate (Winnipeg); Argyle High School; Maples Collegiate (Winnipeg); Caronport High School (Saskatchewan); Miles MacDonell Collegiate (Winnipeg); Murdoch McKay Collegiate (Winnipeg); Frontier School Division; Grant Park High School (Winnipeg); Erickson High School; Vincent Massey Collegiate (Winnipeg); Leaf Rapids School; Faith Baptistes Christian School.

2.3.8 Health Services

Health services in Nelson House are provided through the Fannie Hart Medical Centre, the Family and Community Wellness Centre and the Nelson House Medicine Lodge. In the future, services will also be provided at the NCN Elders Care Home, the construction of which is to be completed by October 2002. Each of these facilities and the programming they provide is discussed in turn.

2.3.8.1 Fannie Hart Medical Centre

The Fannie Hart Medical Centre is a nursing station located in the community. It has x-ray facilities (e.g. extremities), and laboratory capabilities for blood work and swabs (specimens sent to Thompson for processing). Patients requiring non-urgent medical attention not provided at the nursing station, for example, CT scans and surgery and specialist appointments, are referred by visiting doctors to either Thompson or Winnipeg (Lederman Consulting 2000).

During the day, nurses and doctors at the nursing station see approximately 40 to 60 patients on a walk-in basis, with a variety of illnesses and injuries.

Figure 2.42
The Fannie Hart Medical Centre in Nelson House



2.3.8.1.1 Medical Staff

Nurses

On a full-time basis, the nursing station employs two nurses with Bachelor of Nursing degrees and two Registered Nurses. Another Registered Nurse is employed on a part-time basis.

General Practitioners

Two General Practitioners (doctors) visit the community every week – one visits the community from Wednesday to Friday and another visits every Tuesday. An additional General Practitioner visits Nelson House from Wednesday to Friday of every third week.

Dental Care

A dentist visits the nursing station every third week.

Eye Care

As of May 2001, an eye doctor had not been to the community for two years; however, one did visit in June 2001. In general, most Nelson House residents prefer to see an eye doctor in Thompson because there is a shorter wait for prescriptions.

2.3.8.1.2 Programs and Clinics

Staff at the Nursing Station run a variety of programs and clinics for patients, including:

- The Chronic Care Program
- The Well Baby and Well Child Clinic
- Home Visitation
- Prenatal Program, and

- Communicable Disease Control and STD Control

Each of these programs is discussed below.

Chronic Care Program

The Chronic Care Program has operated a clinic at the Nelson House Nursing Station each Thursday morning, since May 1995. The program is intended to keep medical staff at the nursing station up-to-date on the condition of patients with chronic illnesses.

Items included as part of this weekly clinic are:

- Instructions given to chronic care patients about fasting 16 hours prior to coming to the chronic clinic.
- Blood work done for Complete Blood Count (CBC), electrolytes, Liver Function Tests (LFT's) and triglycerides and cholesterol.
- Electrocardiogram (ECG) and chest x-rays.
- Pap smears for women (who are encouraged to have one annually).
- Attending doctor sees chronic patients for their concerns, review of medications, referral to cardiologists or other specialist, or to the diabetes program.
- Nursing staff advise on such subjects as low sodium diets, exercise programs and smoking.

As part of the clinic, a breakfast sponsored by NCN is offered and educational literature and videos are often shown (Lederman Consulting 2000; NCN Nursing Station, personal communication, 2001).

Well Baby and Well Child Program

The Well Baby and Well Child Program is an immunization and health program run by the Public Health Nurse. Through this program, school-age children receive mandatory immunizations and are given thorough physical and intellectual exams, including hearing tests and eye exams, to detect health problems that might affect their potential for learning. As of 1996, 95 per cent of Nelson House children had been immunized as a result of this program (Lederman Consulting 2000; NCN Nursing Station, personal communication, 2001).

Home Visitation

Home visits are conducted by the Public Health Nurse to check on patients who are chronically ill, in palliative care and/or recently discharged from the hospital (NCN Nursing Station, personal communication, 2001).

Prenatal Program

The prenatal program through the Nursing Station addresses medical aspects of prenatal programming and care. A prenatal clinic is held at the Nursing Station each Monday afternoon and is run by the community health nurses. Through this program, women on-reserve receive all medical aspects of prenatal care, with the exception of specialized tests, such as ultrasounds or fetal assessment (these must be completed in Thompson or Winnipeg) (NCN Nursing Station, personal communication, 2001).

Pregnant women are sent to Thompson at 38 weeks (8.5 months) gestation to await delivery. (Lederman Consulting 2000)

Other components of prenatal care programming are provided through the Child and Family Resource Centre at the Family and Community Wellness Centre (see Section 2.3.8.2 below).

Communicable Disease Control and STD Control

Communicable Disease Control and Sexually Transmitted Disease (STD) Control are run by the Public Health Nurse, although many of the patients are seen at the Nursing Station clinics mentioned above. The Public Health Nurse, through this program, follows up on STD cases in the community (Lederman Consulting 2000; NCN Nursing Station, personal communication, 2001).

2.3.8.2 Family and Community Wellness Centre

The Family and Community Wellness Centre opened in March 2000. The facility was developed, in part, as a response to the 1999 Community Wellness Strategy. This strategy emphasized the need to integrate Health Related Services and Child and Family Services in Nelson House, with a Family and Community Wellness Centre to act as the focal point for promoting and facilitating Family and Community Wellness. Most community Health Related Services and all Child and Family Services are now based out of this facility. A Board of Directors and an Executive Director oversee all of the programming and services of the Centre.

The Centre itself is composed of the following smaller facilities:

Family and Justice Conferencing Room: A comfortable, confidential and supportive environment to support local justice and child and family services conferencing. This room is also used for mental health services, including individual, family and group counseling, group work and healing circles.

Child and Family Resource Centre: This Centre brings together a team of practitioners from various programs at the local level that have similar mandates to provide child development and early intervention services. It houses the community's public health nurse, one of the three community health representatives and one Family Support Worker from Child and Family Services.

Elders Resource Centre: This Centre provides a gathering place for elders to connect and engage in healthy activities, often removing them from isolated home environments. The home care worker is based in the Centre.

Health and Fitness Centre: Consists of a large, aerobic exercise area, weights, two large hot tubs, and men's and women's change room facilities.

Arts and Cultural Centre: A place for community members to gather in the evening to enhance and develop their cultural and artistic interests. This is also a place for visitors to

the community to visit as a learning process in their understanding of the rich history of NCN.

Board/Training/Video Room: A place for meetings and workshop presentations. The video capacity also provides a powerful information medium to communicate ideas and can be accessed by the school to reinforce learning objectives.

Community Health Services are discussed below, while programming provided through Child and Family Services is outlined in Section 2.3.9.2 below on Social Services.

Figure 2.43
The Family and Community Wellness Centre in Nelson House



2.3.8.2.1 Child and Family Resource Centre

The mandate of the Child and Family Resource Centre is to promote and enhance the spiritual, emotional, intellectual and physical growth and the well-being of children and to strengthen families as primary nurturers of their children.

The Child and Family Resource Centre provides programming for youth, typically under the age of 18, who are becoming parents. Program topics include pre- and post-natal care (taught through videos and in-person) and cooking classes for expectant mothers. Lunch and healthy snacks are provided for expectant mothers in the program. Home visits are also made to see expectant mothers who are unable to take part in this programming at the Family and Community Wellness Centre.

To provide this program Child and Family Resources employs a child development specialist, a public health nurse manager and a Community Health Representative to address pre- and post-Natal care, HIV and Aids.

2.3.8.2.2 Head Start Program

Funded by Health Canada, the Head Start Program is an early intervention child development program for children and their families living on-reserve. The purpose of the Program is to help children develop their capabilities, attitudes and confidence to be successful in school, and to encourage parents to be involved in their child's development. Core components of Head Start programming include Culture and Language, Education, Health Promotion, Nutrition, Social Support Programs and Parental Involvement. These six components are intertwined in the curriculum.

In Nelson House, the Head Start Program is available to children from ages 0 to 6 and their parents. The Program has the capacity to work with approximately 50 children a week on a half-day basis. An infant program for children ages 0 to 3 years old runs in the morning and a pre-school program for children ages 4 to 6 years old takes place in the afternoon. Most children in the program are referred through the Child and Family Resource Centre or Public Health. Additional referrals are made through Child and Family Services and self-referrals can also be made to the Program.

Parents must participate with their child every day in the infant program and four days a week in the pre-school program. Parents are expected to come and learn with their child every day. Segments are run for parents and children called child-parent interactions. This consists of a circle/story time, in which new themes are addressed. For example, themes can include respectful ways of being with elders, friends and family, fire safety and home safety, and different types of celebrations (e.g Halloween). This is usually followed with child-parent work at one of the six learning centers, each of which focuses on one of the core components of the Head Start Program. Usually work at the learning centers reemphasizes the lessons learned during the child-parent interactions.

When children are working on their own, programs are offered exclusively for parents. Typically, parents in the Program spend two days a week with a family outreach worker who teaches them skills like breast feeding, nutrition, cooking and post-natal care. Two more days are usually spent with the Program Coordinator, during which time they learn things like policies and procedures, behaviour management, Aboriginal parenting, and the development stages of children.

Now in its second year of operation in Nelson House, the Program has been based out the Family and Community Wellness Centre since January 2000. During its first year of operation (from April 1999 to December 1999) Head Start operated as a home-based program.

The Program employs a Program Coordinator, Head Start Instructor, Childhood Instructor and Family Outreach Worker. It shares kitchen facilities and a driver with the Jean McDonald Treasures of Hope Day Care Centre (Head Start Program, personal communication, 2001).

2.3.8.2.3 Mental Health

The Wellness Centre operates a Mental Health Program which provides programming and services to all NCN members in areas of mental health. These include:

- Crisis intervention
- Suicide intervention

- Workshops on topics related to mental health
- Counselling
- Assessment
- Education about mental health issues, and
- Aftercare following, for example, traumas and depression.

Members can be referred to the mental health program by any resource in the community, including the local school and self-referrals.

2.3.8.2.4 Elders Care/Programming

The Elders Resource Centre in the Wellness Centre is home to the Elders Home Care Program and the related Elder Care Support Services (Lederman Consulting 2000). A drop-in centre for elders is located in the facility where elders can have coffee, visit, watch videos and do different crafts.

The Elders Home Care Program employs a Home Care Coordinator, CHR Elder Care Worker and Family Violence Worker. The Program provides:

- Homemakers for elders when requested by a doctor or nurse.
- Medical equipment such as beds, handrails, wheelchairs and canes.
- The Elders Transportation Service, which provides transportation for elders to the store, to go visiting, to meetings, to recreational activities, and to various other activities in the community. The Program owns a van for this purpose.

In addition, there are meetings once a month for elders that want to participate. These meetings provide elders with an opportunity to share their views and ideas amongst themselves and with others. Presentations on current and upcoming events in the community are sometimes made at these meetings to inform elders about what is going on, but also get their opinions and viewpoints before proceeding.

Dances and feasts are also held for the elders and gifts are provided for them at these events.

2.3.8.2.5 Arts and Culture Program

The Arts and Culture Program is provided at the Arts and Culture Centre located in the Wellness Centre. The Program employs one person and provides evening leisure activities for NCN members like pottery classes, painting, quilting, music and story telling.

2.3.8.2.6 Fitness Program

A Fitness program is run through the Fitness Centre which:

- Teaches people about diabetes
- Promotes community wellness, and
- Operates a 'Chub Club' for people to work together at meeting fitness and weight loss goals for health reasons.

One member is employed to provide this fitness programming.

2.3.8.3 Nelson House Medicine Lodge

The Nelson House Medicine Lodge is an alcohol and drug rehabilitation treatment centre located on-reserve. Services provided at the Nelson House Medicine Lodge are available to all of the twenty-six First Nations in the MKO region of Manitoba (Lederman Consulting 2000). The mission of the Centre is to provide:

“...wholistic healing utilizing traditional and contemporary practices to empower healthy lifestyles for all Nations” (Nelson House Medicine Lodge, 2001).

Figure 2.44
The Nelson House Medicine Lodge



The facility is federally funded and operates three programs:

- A 21 bed in-patient Treatment Centre: The Centre employs ten staff members and offers a four-month non-medical program centred on the Medicine Wheel and Cultural Ceremonies (Lederman Consulting 2000).
- The local National Native Alcohol and Drug Abuse Prevention (NNADAP) Program: NNADAP is a federally funded program designed to promote community awareness of the effects of alcohol, solvent and drug abuse. Two NNADAP workers administer the Program in Nelson House, operating out of the Medicine Lodge. The workers provide workshops, give school lectures, show films, use local media and distribute written materials. They also provide one-on-one counselling to members of all ages, as well as assessments and referrals to treatment centres across Canada (Lederman Consulting 2000).
- Out-patient counselling services: In 2001, the Pisimweyapiy Counselling Centre was completed. The Centre provides a nine-week out-patient/health promotion program for NCN members impacted by the Residential School System. In the future, the Medicine Lodge

would like to expand this program to include treatment for couples (Nelson House Medicine Lodge, 2001).

Proposed future programs and objectives include:

- Building a stronger network with local social service agency providers to work collaboratively towards each organization's objectives.
- Establishing a crisis line service in Nelson House.
- Establishing a resource library room for staff and clients.
- Establishing an annual gathering to honour and support graduates from Medicine Lodge programs.
- Providing follow-up and aftercare services for clients completing treatment programs (Nelson House Medicine Lodge, 2001).

At present, a 6,204 square foot addition to the Medicine Lodge is being constructed with funding from First Nations and Inuit Health Branch. The addition will accommodate recreational activities and provide increase storage and office space.

2.3.8.4 Elders Care Home

An Elders Care Home, located behind the Family and Community Wellness Centre in Nelson House, is currently under construction. This 11,000 square foot facility will have 24 suites for community elders and will provide Levels 1 through 4 medical care and housing for elders who are no longer able to look after themselves. Construction finished in October, 2002 and the facility will open in the near future.

Total project costs for the facility are \$3.0 million. The facility capital costs of \$2.6 million are being funded by the NCN Trust and the remainder (e.g engineering costs) is being funded through the Band and a loan. Indian and Northern Affairs Canada may also provide some funding to cover capital costs.

Annual operating and maintenance costs will be paid for by the Province of Manitoba.

Figure 2.45
Construction of the Elders Care Home in Nelson House



2.3.9 Social Services

Social services on-reserve consist of the services provided through NCN Social Assistance and Child and Family Services associated with the Family and Community Wellness Centre. Each of these is discussed in turn.

2.3.9.1 NCN Social Assistance

A welfare coordinator, a welfare aide and a clerk work in Social Services to coordinate the provision of social assistance on a monthly basis to NCN members with little or no income. All funding for the program is provided through INAC and INAC sets the monthly rates provided to recipients. Rates were increased in 2001, however, prior to this they had not been changed since 1998 (NCN Social Assistance, personal communication, 2002).

There are approximately 500 individuals/families in the community who require social assistance. These are evenly spread throughout all age groups and are divided into the following three categories of assistance:

- **Economic:** provided to single individuals and married or common-law families with children. Approximately 250 individuals/families receive this type of assistance, of which 50 are individuals and 200 are families with children. A single person receives approximately \$235 a month, while those with families receive more assistance depending on the number and age of children in the family. A family of four, for example, receives approximately \$800 a month. About 70 per cent of economic clients are men.
- **Social:** provided to single parents with children. Approximately 200 parents in Nelson House receive this type of assistance. Again, the amount provided depends on the number and age of children. A single parent with one child would receive approximately \$496 a month. All social clients are women.
- **Health:** provided to all those over the age of 55. There are approximately 50 people who receive this type of assistance in Nelson House (NCN Social Assistance, personal communication, 2002).

In addition to monthly cash assistance, social assistance in Nelson House also pays for a recipient's rent, electricity, and users fees (about \$50 a month) for sewage, garbage and water. New beds and appliances are also provided every 5 years. If advance payments are required for food, Members may receive a Purchase Order to buy groceries in Nelson House or Thompson. The amount of the purchase order is then deducted from an individual's monthly social assistance cheque. Social assistance also provides homemaker services for elders and those who are sick. About 30 homemakers have been hired to provide these members with free housecleaning and cooking (NCN Social Assistance, personal communication, 2002).

Child tax credits are provided to those with children under the age of 6. Child taxes are paid for children ages 7 to 17 and the amount (about \$65 per child per month) is deducted from the monthly social assistance cheques. Money collected through child taxes is provided to the Wellness Centre and helps fund the Head Start Program and the Jean McDonald Treasures of Hope Day Care (NCN Social Assistance, personal communication, 2002).

Assistance may also be provided to Members working part-time if they are working less than 80 hours a month and making less than a minimum amount. For single clients, the amount earned must be less than \$400 a month, while for those with children the minimum is determined by the number of children and their ages. Members who qualify for this program provide their pay stubs to social assistance and are then reimbursed for 30 per cent of their net earnings. Their rent, hydro, and users fees are also paid for by Social Assistance.

In April, NCN Social Assistance will start to run the Work Opportunity Program (WOP) in association with NCN Human Resources. Initially, the Program will take place in cooperation with the NCN Police Department. The police will hire single social assistance clients for six months to patrol the community.

Although demand for social assistance has increased steadily in recent years, the Department is adequately staffed to handle additional demand (NCN Social Assistance, personal communication, 2002).

2.3.9.2 Child and Family Services

As a result of decentralization of the Awasis Agency, NCN now operates Child and Family Services on-reserve. Child and Family Services, which is located in the Family and Community Wellness Centre, is responsible for administering the *Child and Family Services Act* of Manitoba. Their primary role is to protect children at risk of abuse or neglect and to support and strengthen the well-being of families, particularly those experiencing difficulty in caring for their children.

Child and Family Services in Nelson House stresses health promotion and an early intervention approach towards service delivery. With a goal of prevention/intervention before apprehension, they strive to keep children in their families. As mentioned previously, they have been working in partnership with Health Related Services to develop a strategic approach which emphasizes finding solutions to the root causes of health and social problems.

Given its broad mandate, Child and Family Services encompasses many roles. These include provision of day care services, family support and preservation services, the First Nations Family Justice: Mee-noo-stah-tan Mi-ni-si-win Program, the investigation of child maltreatment, case management, and foster home placements for children who are neglected or exposed to any type of abuse (physical, verbal or mental) at home. Each of these is discussed, in turn, below.

2.3.9.2.1 Jean McDonald Treasures of Hope Day Care Centre

The Jean McDonald Treasures of Hope Day Care Centre, which is funded by Human Resources and Development Canada, operates out of the Family and Community Wellness Centre. The Day Care Centre offers an infant program for children ages four months to two years and a pre-school program for children ages two to six years old. At present, the Centre's capacity provides for a maximum of 8 children in the infant program and 24 children in the pre-school program.

Both programs at the Day Care Centre are offered as full-day programs, operating daily from 8:00 a.m. to 5:15 p.m., Monday to Friday. Breakfast, lunch and a snack are provided.

Interested parents can apply to enroll their children in the programs offered and, if space is available, their children are able to attend. Parents with children enrolled at the Day Care Centre, pay \$12.00 a day or \$14.00 a day if they would like the available drop-off service.

The Day Care Centre employs a Coordinator, two Early Childhood Educators II, four Early Childhood Educators and a Special Needs Helper. Currently there are two special needs children in the daycare (Jean McDonald Treasures of Hope Day Care, personal communication, 2001).

2.3.9.2.2 Family Support and Preservation

Family Support and Preservation concentrates almost exclusively on providing one-on-one assistance to families who are experiencing difficulty in caring for their children. Through intervention and prevention, Family Support and Preservation works with families by providing family counseling, guidance and other prevention services in order to prevent children coming into care or needing treatment programs.

Services provided through Family Support and Preservation include:

- Providing homemakers for crisis intervention.
- Providing interveners.
- Providing psychologists.
- Hosting family conferences, which usually include the children, to develop plans for the family.
- Monitoring families through house visits.

Family Support and Preservation also has a school liaison that provides prevention/intervention at the school level. The school liaison works with children having trouble at school. As part of this process, the school liaison undertakes home visits and provides counseling for both the student and their parents.

2.3.9.2.3 First Nations Family Justice: Mee-noo-stah-tan Mi-ni-si-win Program

The First Nations Family Justice: Mee-noo-stah-tan Mi-ni-si-win Program is intended to provide an alternative and culturally-appropriate way of addressing child and family matters outside of the regular Child and Family Services system. It aims to bring together family, extended family, community members, elders and community service providers in the resolution of child protection concerns through the use of properly trained o-kwes-ki-mo-wewak (family mediators). O-kwes-ki-mo-wewak use a combination of traditional peacemaking and family mediation skills. Their role is to help facilitate the understanding and discussion that will lead to resolution (First Nations Family Justice: Mee-noo-stah-tan Mi-ni-si-win Program 2001).

Interventions with families are focussed on facilitating the care and healthy development of children and on restoring health, harmony and balance within the family unit. Emphasis is placed on establishing strong care-giving environments through the assistance of community members and service providers, and on ensuring that the responsibility for addressing child and family matters remains with the family and community. The process does not attempt to assign blame, but rather to identify what supports and developmental opportunities are required to assist the family in becoming strong and healthy caregivers (First Nations Family Justice: Mee-noo-stah-tan Mi-ni-si-win Program 2001).

Child and Family Services providers act as both a monitor and resource in planning for the child. While the project aims to facilitate the development of healthy family environments so that children can remain in their homes, in the event this is not possible, temporary alternative placements are sought with extended family or other community members, or other such placement as will best meet the needs of the children (First Nations Family Justice: Mee-noo-stah-tan Mi-ni-si-win Program 2001).

Initially in Nelson House, the First Nations Family Justice: Mee-noo-stah-tan Mi-ni-si-win Program focused on concerns related to abandonment, neglect and children deemed to be out of control. They are now working at finding community-based resolution to any concerns regarding children at risk, wherever alternative justice or diversions are possible (First Nations Family Justice: Mee-noo-stah-tan Mi-ni-si-win Program 2001).

2.3.9.2.4 Investigations of Child Maltreatment

Child and Family Services employs an Intake Specialist to receive the initial complaint and investigate potential cases of child maltreatment. This person also assigns cases to the appropriate case manager and, if appropriate, may make referrals to other community agencies or services.

2.3.9.2.5 Case Management

Case Management provides child protection services to on-reserve NCN members. In addition to a Supervisor, there are two Case Managers which deal exclusively with Child and Family Services cases on-reserve.

There are also two non-jurisdictional Case Workers who monitor and supervise the files of NCN children placed in South Indian Lake and in other communities.

2.3.9.2.6 Foster Home Placements

Two Community Care Workers are employed by Child and Family Services to find foster home placements for children, educate foster parents about their role and responsibilities, and monitor foster home placements. Community Care Workers are also responsible for screening applicants wishing to become foster parents.

2.3.10 Emergency Services

Emergency services in Nelson House include both ambulance and fire services. Initially combined, these services now operate independently.

2.3.10.1 Ambulance Service

Ambulance services have been supplied and operated by NCN since about 1994/1995. Originally operated by Nelson House Forest Industries, ambulance services were taken over by the NCN Fire Department in 1997. More recently, ambulance services have become independent of the local Fire Department (Interviews with Nelson House residents, personal communication, 2002).

Ambulance service to Thompson General Hospital, the closest full-service hospital to Nelson House, is available to residents of the Nelson House reserve community, as well as the adjacent Northern Affairs

(Métis) community. The ambulance is a Medivac unit and is equipped with oxygen and emergency supplies. Most drivers are certified as First Responders and are certified in CPR. A nurse from the nursing station accompanies patients on all ground Medivacs to Thompson (Lederman Consulting 2000). Costs for operating the ambulance are covered by the Manitoba Medical Services Branch, which pays a flat rate for each ambulance trip into Thompson (Interviews with Nelson House residents, personal communication, 2002).

The most common emergencies requiring ambulance transportation to the Thompson General Hospital are women in labour, physical injuries and medical needs of the elderly and/or chronically ill. There have been some emergencies related to motor vehicle accidents, but this is not very common. In general, the number of emergencies have been reduced since NCN began operating the ambulance and now average about one a day (Interviews with Nelson House residents, personal communication, 2002).

Transportation for patients on-reserve to the nursing station during the day is by local taxi or by a separate medical transport vehicle operated by ambulance services. After-hours transportation is by local taxi, medical transport or the local police vehicle.

Air Medivac is available by floatplane or helicopter, but is rarely used because of the greater cost (Lederman Consulting 2000).

Figure 2.46
NCN Ambulance Services



2.3.10.2 NCN Fire Department

The Nelson House Fire Department began as a volunteer fire brigade in 1972. At this time, they had no equipment and concentrated primarily on fire prevention. The community eventually got water trucks with fire fighting capabilities and the Fire Department began training local volunteers to fight fires on-reserve. In the late 1980s, a Fire Hall was built in Nelson House and a fire truck was purchased for use in the community. In the 1990s, they also purchased a Snuffer truck, which uses compressed foam (Interviews with Nelson House residents, personal communication, 2002).

Today, the NCN Fire Department works jointly with the smaller fire department in the Northern Affairs (Métis) community of Nelson House and responds to domestic, commercial and forest fires on-reserve. They also work with the provincial government to provide training for fighting forest fires throughout northern Manitoba. The Department has a full-time Fire Chief, 12 active trained (Level 2) volunteer Firefighters and 35 local persons trained and available to respond as the need arises. The Department runs two 12-hour shifts per day with three Firefighters on each shift. Auxiliary personnel are called in if required to supplement the three-person crew (Interviews with Nelson House residents, personal communication, 2002; Lederman Consulting 2000).

The Band pays for the Fire Chief's salary and provides honorariums for volunteer firefighters. Additional funding for the Department is provided through the Community Safety Program operated by the NCN Trust. The Trust has bought several pieces of equipment for the fire brigade, including two fire trucks, the 'jaws of life', and a triple combination pump with ancillary equipment (NCN Trust, personal communication, 2001; Lederman Consulting 2000).

Although the demand for the Department's services is high, they are considered to be adequately staffed and equipped to meet current demands. The Department also has the capacity to take on additional demand, if necessary (Interviews with Nelson House residents, personal communication, 2002).

Figure 2.47
NCN Firefighting Services



2.3.11 Policing and Enforcement

The NCN Police, on-reserve in Nelson House, currently have 9 full-time staff – a Chief, a Senior Constable and 7 Junior Constables. Guards are also hired on an occasional basis to watch prisoners, answer phones and undertake other office duties. As a result of a recently purchased communications system which allows officers to answer phone calls in their vehicles, the use of guards has decreased. They are now used only when prisoners are being held at the police station (NCN Police, personal communication, August 2001).

Police officers in Nelson House work in pairs in 12-hour shifts. Typically, there are two Constables on duty at any one time; however, during the middle and end of the month the number of complaints is often so great that another two Constables are called on duty. Constables never answer complaints on their own, there are always two Constables present (NCN Police, personal communication, August 2001).

The Thompson RCMP detachment also serves the community and will respond at any time as the need arises. On average, the RCMP are in Nelson House three to four times per week (Lederman Consulting 2000).

Funding for the NCN Police is provided through the Band and the NCN Trust office.

2.3.11.1 Incidents of Crime

Incidents of crime on-reserve for the years 1990 to 2000 were determined using NCN police records. Table 2.40 presents criminal code offences, provincial statute offences and other crimes and police services for this time period. Total offences fluctuated significantly, with more than 300 offences occurring in 1991 and 1998 and less than 160 offences in 1990, 1992 and 2000.

Table 2.40
Incidents of Crime On-Reserve at Nelson House: 1990 to 2000

OFFENCE	Year										
	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
All Offences	139	376	112	272	239	262	172	208	380	250	153
Total Criminal Code Offences	64	188	89	202	166	181	134	173	304	170	120
Total - Violent Crimes	31	80	31	92	98	99	78	92	163	93	58
Assault	24	55	24	61	49	39	40	42	87	56	30
Assault with a weapon	0	4	0	7	2	3	1	8	16	4	2
Spousal Assault	4	15	4	17	40	50	31	21	44	29	19
Sexual Assault	2	2	3	4	5	6	5	7	6	3	1

OFFENCE	Year										
	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Assault (P.O.)	0	0	0	0	0	0	0	4	3	1	0
Assault Cause	0	0	0	0	1	1	0	0	0	0	0
Child Abuse	0	4	0	3	1	0	1	2	1	0	0
Child Neglect	1	0	0	0	0	0	0	0	0	0	0
Utter Threats	0	0	0	0	0	0	0	8	6	0	6
Total - Property Crimes	32	102	52	96	63	72	44	76	115	63	54
Breaking and entering	8	38	10	29	23	19	25	31	36	30	25
Theft	9	34	27	36	19	27	6	11	31	10	11
Theft Skidoo	0	0	0	0	0	0	0	5	0	0	0
Theft Auto	0	0	0	0	0	0	0	3	0	0	0
Fraud	1	2	0	0	0	0	0	0	0	0	0
House Fire (Arson)	2	0	0	0	0	0	0	1	5	2	1
Shop Lifting	0	0	0	0	0	0	0	1	0	0	0
Total - Other	1	6	6	14	5	10	12	5	26	14	8
Breach Probation	0	0	0	0	0	0	0	2	0	0	0
Mischief	12	28	15	31	21	26	13	24	43	21	17
Impaired Driver	1	6	5	9	1	5	6	3	8	5	3
Other Criminal Code Offences	0	0	1	5	4	5	6	0	18	9	5
Total Other Federal Offences	1	0	3	6	6	9	0	4	2	4	1
Firearms Offence	0	0	2	0	3	8	0	3	2	1	1
Narcotic Control Act (replaced by CDSA in 1999)	1	0	1	6	3	1	0	1	0	0	0
Controlled Drugs and Substances Act (CDSA)	0	0	0	0	0	0	0	0	0	3	0
Total Provincial Statute Offences	4	10	5	29	21	14	12	19	31	46	17
Elder Abuse	0	0	0	0	0	0	0	2	1	0	0

OFFENCE	Year										
	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Mental Health Act	0	0	0	0	0	0	3	7	9	14	7
Motor Vehicle Accident	2	5	0	5	7	7	4	6	10	6	2
Highway Traffic Act	0	1	3	8	4	1	0	0	0	9	5
Off Road Vehicle Act	0	1	0	0	0	0	0	0	0	0	0
Wildlife Act	0	0	0	0	0	0	2	0	0	0	0
Liquor Control Act	1	2	2	12	6	1	0	0	7	11	0
Fatal Injuries Act	1	1	0	4	4	5	5	3	4	6	3
Other Provincial Statutes	0	0	0	0	0	0	0	1	0	0	0
Total Other Offences/ Police Services	70	178	15	35	46	58	24	12	43	30	15
Assist RCMP	0	0	0	0	0	0	0	1	13	10	1
Assist Other Police	0	0	0	0	0	0	0	0	1	0	
Assist Awasis	0	0	0	0	0	0	0	3	3	1	0
Assist Other	11	6	4	11	20	21	5	3	3	2	2
Assist General Public	59	172	11	24	26	37	19	5	22	17	1
Crime Prevention/Police Community Relations	0	0	0	0	0	0	0	0	1	0	7
NCN Police Certificate of Notice (CON)	0	0	0	0	0	0	0	0	0	0	1
Band Council Resolution	0	0	0	0	0	0	0	0	0	0	1
ByLaw (Dog)	0	0	0	0	0	0	0	0	0	0	2

Source: Nisichawayasihk Cree Nation Police Reports, 1990 to 2000.

Notes: The data for the following years is not complete (e.g., January to February):

- 1990 is for August to December
- 1996 is for January to September
- 2000 is for January to August

2.3.11.2 Crime Rate On-Reserve

Crime rate is defined as the total number of *Criminal Code of Canada* incidents involving youth and adults in a particular year. Typically, crime rate is reported as the number of reported crimes per 100,000 people. Given the small size of the Nelson House population, crime rates for this study have been calculated as the number of reported crimes per 1,000 people. It should be noted that crime rates may vary owing to differences in the jurisdiction's enforcement methods, charging practices and available diversion programs, rather than the incidence of actual crime (Government of Alberta 2000).

Overall, the incidences of crime per thousand at Nelson House⁹ fluctuated between 1991 and 1999¹⁰, with highs occurring in 1991, 1993 and 1998 (see Figure 2.48 below). With the exception of these years, the rate of crime in Nelson House per thousand people was less than the provincial crime rate.

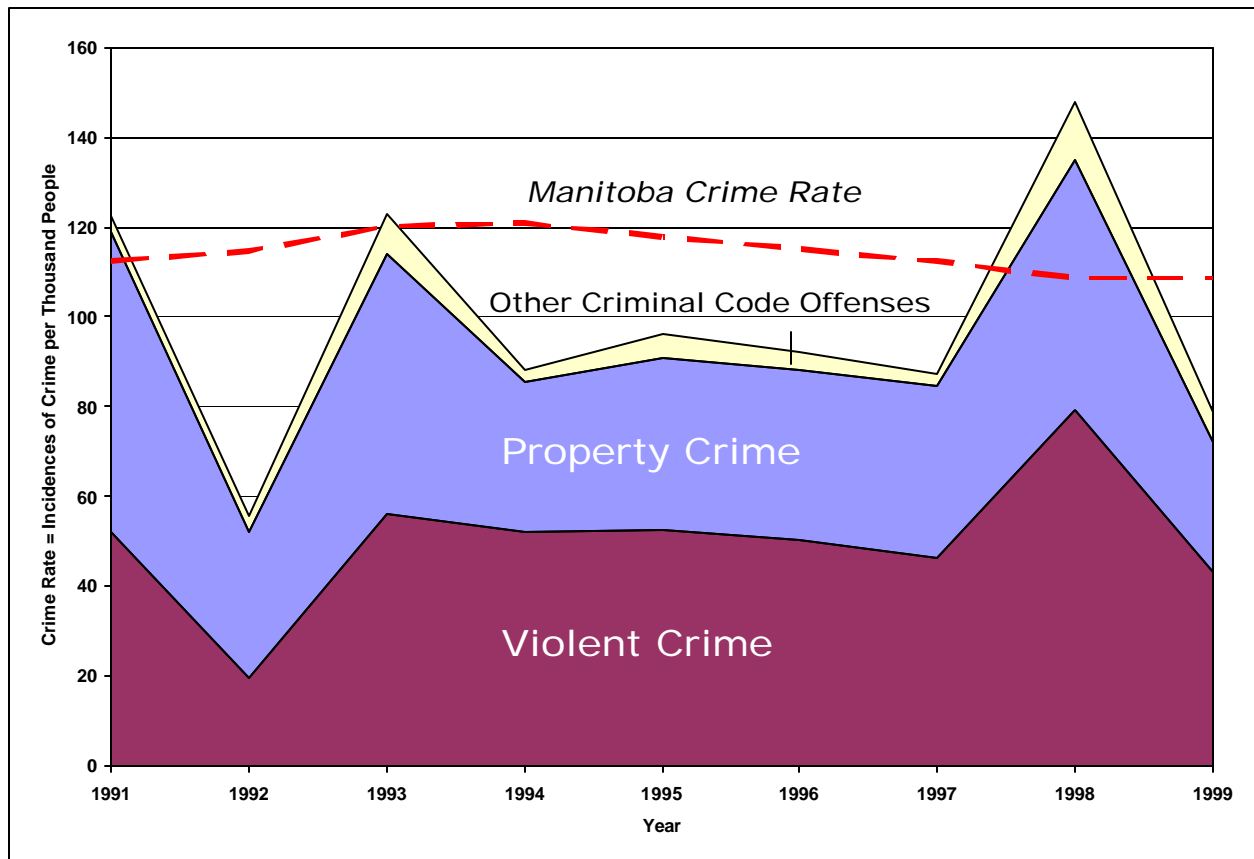
The Nelson House crime rate differs from the provincial rate in the incidences of violent crime versus property crime. Throughout the time period from 1991 to 1999, violent crime in Nelson House tended to occur more frequently than property crime - approximately 1.4 times more violent crime than property crime was reported in most years. Provincially, however, about 9 times more property crime was reported than violent crime during these years (Statistics Canada 2000). Violent crime involves offences that deal with the application, or threat of application of force to a person. These include homicide, attempted murder, various forms of sexual and non-sexual assault, robbery and abduction¹¹. Property crimes, on the other hand, do not involve the use or threat of violence against an individual, but rather unlawful acts with the intent of gaining property. Theft, breaking and entering, fraud and possession of stolen goods are examples of property crimes (Government of Alberta 2000).

⁹ Calculated using the number of crimes reported in the NCN Police records and the on-reserve population data provided by INAC.

¹⁰ The years 1990 and 2000 have not been included because of incomplete data. Incomplete data were also provided for 1996.

¹¹ Traffic incidents that result in death or bodily harm are not included.

Figure 2.48
Overall Crime Rate On-Reserve in Nelson House from 1991 to 1999
Compared to the Provincial Crime Rate



Sources:

1. Nisichawayasihk Cree Nation Police Reports, 1990 to 2000
2. Statistics Canada data on *Criminal Code Offenses* in Manitoba, 1991 to 2000

Notes:

1. Data for 1996 only included values for January to September. As such, the overall crime rate for the year was estimated as the average between the crime rates in 1995 and 1997.
2. Crime rates may vary as a result of differences in jurisdiction enforcement methods, charging practices and available diversion programs, rather than the incidence of actual crime.

2.3.12 Community Recreation

2.3.12.1 Recreation Facilities

On-reserve recreation facilities include the Family and Community Wellness Centre, the Gilbert McDonald Arena, and Otetiskiwin Kiskinwamahtowekamik.

In terms of recreation facilities, the Family and Community Wellness Centre has the following:

- A Health and Fitness Centre with a large, aerobic exercise area, weights, two large hot tubs, and men's and women's change room facilities.

- An Arts and Cultural Centre for community members to gather in the evening to enhance and develop their cultural and artistic interests.

The Gilbert McDonald Arena provides ice for local hockey teams and casual skating. A Youth Drop-in Centre is located in the arena mezzanine and has a pool table, ping-pong table and video games. A canteen providing hot food service is located in the arena and is usually open during the day for lunch and for hockey games. The arena has five full-time employees – a Manager and four Attendants. Two Security Officers, a casual Worker and two Canteen Workers also work in the arena on a part-time basis.

Figure 2.49
The Gilbert McDonald Arena in Nelson House



The local school, Otetiskiwin Kiskinwamahtowekamik, also has a gymnasium that is available for use in the evenings for team sports and other activities.

2.3.12.2 Recreation Programming

Recreation programming is provided by the Family and Community Wellness Centre and the NCN Trust.

The Family and Community Wellness Centre provides an Arts and Culture Program, which offers evening leisure activities for NCN members like pottery classes, painting, quilting, music and story telling. They also coordinate a Fitness Program which teaches people about diabetes, promotes community wellness, and operates a 'Chub Club' for people to work together at meeting fitness and weight loss goals for health reasons.

Funding through the NCN Trust Office is used to support administrative and programming costs for on-reserve recreation through NCN Parks and Recreation. Since 2000, NCN Parks and Recreation has provided programs in most areas of the community, rather than one central location, and this has led to a corresponding increase in participation. Programs offered and the approximate number of participants in 2000/2001 are outlined in [Table 2.41](#) below.

Table 2.41
NCN Parks and Recreation Programs and Participation by NCN Members
Living On-Reserve at Nelson House: 2000/2001

Program	Number of Participants
Indoor Basketball	20-30
Indoor Volleyball	20-30
Swimming	50-80
Bowling	30-50
Skiing	20-40
Broomball	20-40
Curling	30-50
Minor Hockey	40-60
Hockey	20-40
Outdoor Sponge Hockey	20-30
Golf	30-50
Outdoor Volleyball	15-30
Outdoor Basketball	10-20
Special Events	50-100
Softball	50-100
Indigenous Games	50-100

Source: NCN Trust Office 2000.

In addition to the above programming, NCN Parks and Recreation provides sponsorship for local tournaments, transportation for recreation trips to participate in organized activities, and recreational equipment to participate in the organized activities. They also manage the local Junior B Hockey Team, the NCN Flames.

With Trust funding, NCN Parks and Recreation has also constructed and maintains several playgrounds in the community.

The Parks and Recreation Program employs a Recreation Director, a Recreation Superintendent and a Recreation Coordinator (NCN Trust, personal communication, 2001; NCN Trust Office 2000; Lederman Consulting 2000).

2.3.13 Other Community Services

Additional community services are provided by:

- NCN Government (through the band office)
- NCN Trust Office, and
- NCN Future Development Office.

Each of these is outlined below.

2.3.13.1 Additional NCN Government Services

2.3.13.1.1 Probation Services

Two staff members, a trained Counselor and a Social Worker, are employed by NCN to look after probation services programming. Through this program, members on probation are offered counseling in domestic violence and anger management.

2.3.13.1.2 Human Resources

The Human Resources Department in Nelson House employs three members on a full-time basis. They primarily work to help members identify possible training and employment opportunities. They also provide application forms for birth certificates, social insurance numbers, and the Canadian Pension Plan. When needed, Human Resources staff assist clients in filling out these various applications.

2.3.13.1.3 Technical Services

NCN has a full-time individual responsible for community technical services, including:

- community aesthetics
- water and sewer delivery
- housing
- the Gilbert McDonald Arena
- the water treatment plant
- dog control, and
- bereavement and burials.

2.3.13.1.4 Resource Management

The Band has one staff member who looks after resource management within the local area. In addition to working with the Resource Management Board (see Section 2.3.13.2.4 below) answering relevant information requests, this individual is responsible for the following:

- Completing grant applications on behalf of the community for projects like tree planting, the cleaning of riparian areas and fisheries enhancement initiatives.
- Providing information to trappers and other resource users about proposed activities within the registered traplines (RTLs) in the Nelson House Resource Management Area (RMA).
- Making lake allocations within the Nelson House RMA to commercial fishermen.
- Making land allocations of RTLs within the Nelson House RMA to trappers.
- Undertaking various land use and resources studies
- Managing the spawn camp at Nawinitan Creek. This camp produces fish eggs, which are sent to a hatchery to hatch and then used to stock lakes within the Nelson House RMA.

2.3.13.2 NCN Trust Office

The Nisichawayasihk Trust was created on March 18, 1996 as part of the 1996 NFA Implementation Agreement between NCN, Manitoba Hydro and the governments of Manitoba and Canada. Under this agreement, all monies received by NCN in payment for the settlement of claims are placed into the Trust, which is controlled, managed and protected on behalf of the community by a group of Trustees appointed by Chief and Council. The NCN Trust Office was created at the same time to administer the

Community Approval Process (CAP) used for determining how Trust monies are to be allocated and the distribution of Trust monies as approved through this process. The NCN Trust Office is also responsible for ensuring that all provisions of the 1996 Agreement and obligations of Manitoba Hydro are properly fulfilled (NCN Trust Office 2001).

In addition to funding NCN Parks and Recreation (see Section 2.3.12.2 above), the NCN Fire Department, NCN Police and housing construction, the Nisichawayasihk Trust, through the NCN Trust Office, administers and/or funds a number of other community programs, including the Granny and Grandpa Program, the School Breakfast Program, Country Foods Program and the Resource Management Board. Each of these is discussed in turn.

There is also a claims process under the 1996 Implementation Agreement, which NCN administers through the Trust Office.

2.3.13.2.1 Granny & Grandpa Program

The Cultural Program, together with the Elder's Traditional Program, have been renamed by students and staff at Otetiskiwin Kiskinwamahtowekamik as the "Granny & Grandpa Program". This Program has become an integral part of curriculum at Otetiskiwin Kiskinwamahtowekamik and is used to teach community youth traditional NCN values, beliefs and practices. Under this Program, funding is provided to elders to teach youth traditional teachings and Cree language, as well as skills like how to hunt, trap and fish. Through this Program, young people are also introduced to and produce tan hides, snowshoes, axe handles, bow and arrows, utensils and handicrafts (e.g. mukluks, moccasins, mitts, gauntlets, drums and teekinakins) (NCN Trust Office 2001). The Program is composed of four seasons – winter, spring, summer and fall, and each season has a specific task to be performed based on the needs of traditional lifestyle practices. Elders work with students out of a cabin located behind the school.

Funds for the Granny & Grandpa Program are used to provide the ten participating elders with a bi-weekly honorarium of \$300, to purchase the supplies/materials for making handicrafts and traditional tools and to cover travel costs for school trips offered through this program. The funding is also used to sponsor elder's events during the annual pow-wow and community festivals (NCN Trust Office 2000).

While all students in Nelson House are exposed to this Program to some degree¹², students in the Outdoor Education Program participate to the greatest extent. This Program provides funding for approximately twelve special needs students, ranging in age from 10 to 16 years, to learn life skills through seasonally-based traditional activities. In this Program, a curriculum is set to best meet the education level of the student and this is then coupled with an outdoor component consistent with Cree culture. Components may include life skills, outdoor survival, trapping, the Cree language, cooking, respect of others, self-respect and arts and crafts. The Program operates from two cabins that were built with help from the Outdoor Education students, as well as camps loaned to the program by different individuals. Funding from the Trust is used to sponsor hunting expeditions, supply and material

¹² A priority for the Nelson House Education Authority is to more strongly incorporate this Program into the overall school curriculum (NCN Trust, personal communication, 2001).

purchases, honoraria for selected guides and youth events at local festivals (Proposal for 2002 Cultural Program; NCN Trust Office 2000).

2.3.13.2.2 School Breakfast Program

Funding for the School Breakfast Program is used to provide breakfast for students enrolled in Nursery to Grade 8 at Otetiskiwin Kiskinwamahtowekamik. The program has two objectives:

1. Students will be provided with breakfast to ensure learning will take place, and
2. Responsibility for the Program rests with the Junior Student Council, providing these students with leadership skills.

The program provides breakfast for an average of 360 students per day.

2.3.13.2.3 Country Foods Program

The Country Foods Program is a non-profit organization funded and administered through the NCN Trust Office. This Program supplies community Elders, those who are medically ill and single parents with traditional wild foods. These include wild meats, waterfowl, fish, berries and some medicinal herbs. In the tradition of sharing, anyone in the community who gathers traditional foods is able to donate to the Program - typically, 50 per cent of that gathered goes to the Program and 50 per cent is kept by the resource harvester to share with their family. In some cases, local resource harvesters are compensated for their expenses with Purchase Orders for gasoline, food, and other necessary items. Assistance is also provided to community members who wish to establish and maintain community gardens.

The Program is within the purview of the NCN Trust Office Resource and Land Coordinator and employs three permanent and three casual workers. Program workers are responsible for packaging donated food, maintaining equipment and harvesting additional resources for the Program if supplies are low. Hunting or fishing trips are organized through the Country Foods Program for staff members and, in some cases, local residents.

The Country Foods Program is also responsible for looking after the Leftrook Lake facility. This facility, located at Leftrook Lake, has a number of cabins and can be used by anyone in the community for hunting, fishing or other traditional pursuits. It was developed following the Churchill River Diversion (CRD) to provide Members with a lake environment that had not been affected by the mercury poisoning associated with the CRD.

Figure 2.50
The Nelson House Country Foods Distribution Centre



2.3.13.2.4 Resource Management Board

The Resource Management Board falls within the jurisdiction of the NCN Trust Office and was established under Article 6 of the 1996 NFA Implementation Agreement. The Board provides for joint management between Nelson House and the Province of Manitoba of land and resources in the Nelson House RMA. The Board includes four members from NCN, appointed by Chief and Council, and four appointed provincial representatives. Each party covers the associated costs of participating on the Board, with the costs to NCN covered by Trust monies (NCN Trust Office 2000).

Article 6.5 of the 1996 NFA Implementation Agreement indicates that Board functions include:

- Investigating resources, their use and any influences on them.
- Monitoring activities within the Nelson House Resource Management Area.
- Proposing subjects for research.
- Preparing information and communication strategies.
- Consulting with the public through meetings, workshops or other means.
- Developing and recommending resource management plans for approval by NCN Chief and Council and Manitoba. Plans can include provisions for:
 - Total allowable harvesting levels;

- Species enhancement;
 - Methods of harvesting;
 - Health and safety considerations;
 - Procedures for the assignment or re-assignment of new, vacant or under-utilized traplines, fishery quotas and wild rice leases;
 - Enforcement considerations;
 - Protecting and enhancing resources and their environment;
 - Prescribing and monitoring levels of use;
 - Establishing priorities and allocations for domestic, commercial and recreational uses of resources by lease, permit, quota or otherwise;
 - Resolving conflicts related to the use of resources;
 - Protecting and conserving resources; and
 - Sustainable development of resources.
- Developing and recommending land use plans for approval by NCN Chief and Council and Manitoba. Plans can include provisions for:
 - Zoning lands;
 - Prescribing areas of land or bodies of waters for purposes of regulating use;
 - Prescribing and regulating land uses;
 - Establishing administrative arrangements for the construction or occupations of cabins or shelters;
 - Recognizing and preserving areas of ecological, cultural or historical significance; and
 - Resolving conflicting uses of land.
 - Carrying out other duties as assigned to it by NCN Chief and Council and Manitoba.

Before recommending that a Land Use Plan or Resource Management Plan be adopted, the Board is responsible for holding one or more public meetings to obtain the views of, and provide information to, interested parties.

At present, the Board is considering a consolidation of its planning efforts into a Basic Planning Statement for the RMA. This Planning Statement would then be used to guide the nature and direction of land use and resource management planning in the RMA (Nelson House Resource Management Board 2001).

Both the Resource and Land Coordinator working at the NCN Trust Office and the Resource Manager at the Band Office work with the Resource Board to answer relevant information requests. The Province also provides resource support as requested.

2.3.13.3 Nelson House Future Development

The 1996 NFA Implementation Agreement signed by NCN, Manitoba Hydro and the provincial and federal governments included provisions for a future development joint planning process for NCN and Manitoba Hydro to review potential projects in the Nelson House RMA before they proceed.

In 1997, an NCN Future Development Team was established to facilitate discussion between NCN and Manitoba Hydro regarding proposed future hydro-electric developments within the Nelson House Resource Management Area. The Future Development Team engages in discussions with Manitoba

Hydro, conducts research on an array of topics, guides the community involvement process and consults with an external environmental assessment team about the potential impacts of the proposed projects.

As part of the Future Development process, the Future Development Team established the Future Development Office in Nelson House. Nine local Community Consultants, including 3 Elders Consultants who are fluent in Cree, a Translator, a Community Liaison and an Office Manager have been hired to inform NCN members about any discussions between NCN and Manitoba Hydro and to get feedback from the community. They do this by going door-to-door with information, hosting open houses, producing and distributing newsletters and conducting surveys. Along with members of the Future Development Team, Community Consultants also participate on various Committees responsible for assessing and planning for the proposed future hydro-electric developments. The Future Development Office also employs a Secretary and an Administrative Assistant responsible for accounting.

A smaller Future Development office has also been set up in South Indian Lake and employs two full-time, local Community Consultants.

Figure 2.51
NCN Future Development Offices in Nelson House



3.0 COMMUNITIES IN THE PROJECT REGION

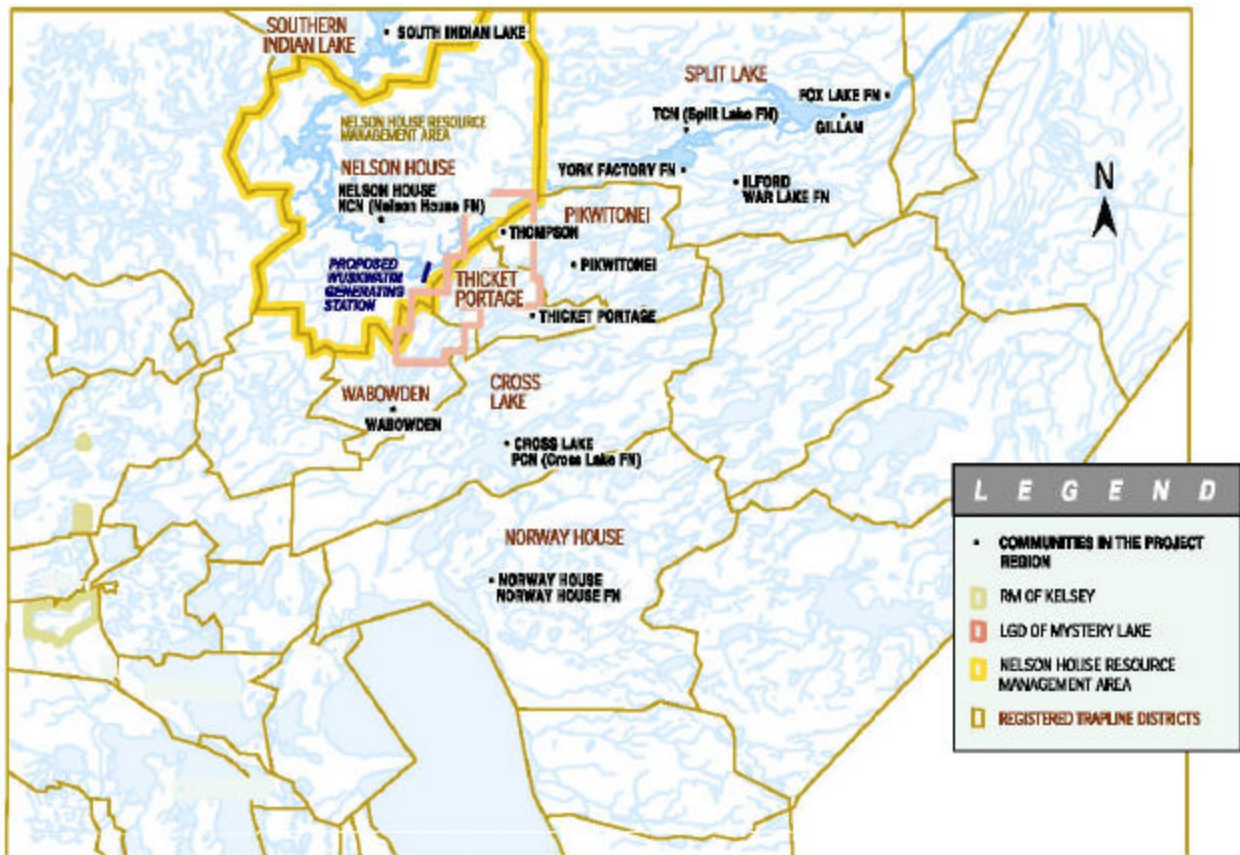
This section outlines the current socio-economic setting within the Project Region for the proposed Wuskwatim Generating Station.

The Project Region is a broad region, identified for the purposes of Public Consultation for the proposed Wuskwatim Generating Station. It includes communities that may be affected or have an anticipated interest in reviewing potential impacts from the generating station project. Inclusion in this region does not necessarily mean that significant environmental impacts are in fact expected on the basis of the current Manitoba Hydro and NCN environmental studies (see [Volume 2](#) of the EIS).

The Project Region for the proposed Wuskwatim Generating Station is shown in Figure 3.1 and includes the communities shown in bold.

Included in a separate EIS pertaining to Associated Transmission Facilities is information pertaining to communities in the Project Region that potentially may be affected only by the transmission facilities.

**Figure 3.1
Communities in the Project Region**



There are three different types of communities in the Project Region: First Nation communities, Northern Affairs communities and Incorporated communities (city, town and local government district). The different communities and their classification are indicated below:

- First Nation communities
 - Nisichawayasihk Cree Nation (NCN) (also included in the Local Region)
 - Tataskweyak Cree Nation (TCN)
 - War Lake Cree Nation
 - York Factory First Nation
 - Fox Lake Cree Nation
 - Pimicikamak Cree Nation (PCN)
 - Norway House Cree Nation

- Northern Affairs communities
 - Nelson House (also included in the Local Region)
 - South Indian Lake (also included in the Local Region)
 - Ilford (This community is covered with War Lake Cree Nation since almost the entire population became part of the First Nation when it was created in 1993.)
 - Pikwitonei
 - Thicket Portage
 - Wabowden
 - Cross Lake
 - Norway House

- Incorporated communities
 - Gillam
 - Thompson and the Local Government District (LGD) of Mystery Lake

Special consideration has been given to the City of Thompson and the LGD of Mystery Lake because of their proximity to the proposed Wuskwatim Generating Station (Thompson is 45 kilometers northeast of Wuskwatim Lake), and Thompson's importance as a regional centre for northern Manitoba. After Nelson House, Thompson is expected to experience the most noticeable and diverse socio-economic impacts from the proposed Wuskwatim Generating Station.

3.1 THE CITY OF THOMPSON & LGD OF MYSTERY LAKE

This section presents the socio-economic setting for the City of Thompson and surrounding Local Government District (L.G.D.) of Mystery Lake. The topics addressed include:

- History and Trends
- Population
- Economy
- Goals / Plans
- Built Environment and Community Services
- Transportation Infrastructure
- Community Infrastructure and Services
- Municipal Finance
- Topics related to Personal, Family and Community Life dealing with Traffic and Navigation Safety and Access, Outdoor Recreation and Community Goals and Plans.

For each topic area, attempts were made to collect information dating back 20 years to 1981.

The information for this section was collected using readily available data. In cases where existing data were not available, information gaps were filled by conducting key person interviews. In total, 18 individuals, and one group, were interviewed. Most of these interviews were conducted in Thompson between January 14th and 16th, 2002. Table 3.1 below indicates the individuals with whom key person interviews were carried out, as well as the topics addressed during each interview.

Table 3.1
Thompson Key Person Interview Program: 2002

Interviewee	Affiliation	TOPICS ADDRESSED
Lynn Taylor	Thompson City Manager (senior contact person for the planning district)	<ul style="list-style-type: none"> • Identification of other contacts • General implications and impacts • Zoning • Demographic data • Compatibility with goals & plans • Development Plan background
Ma Mow We Tak	Cultural and Friendship Centre	<ul style="list-style-type: none"> • Aboriginal Demographic data • Availability of rental housing and short-term accommodation • Child care capacity
Dennis Linklater, NCN Future Development Community Consultants and NCN Membership Clerk	NCN Future Development Office, Nelson House	<ul style="list-style-type: none"> • Confirmation of members list • NCN demographic information • Migration patterns • Factors stimulating migration

Interviewee	Affiliation	TOPICS ADDRESSED
Tim Johnston	North Central Development Corporation and past President of the Thompson Chamber of Commerce	<ul style="list-style-type: none"> • Economic trends • Economic history • Business trends • Business history
Brad Ritchie	Clarica and President of the Thompson Chamber of Commerce	<ul style="list-style-type: none"> • Economic trends • Economic history • Business trends • Business history
Craig Hanley and Gary Sepatelli	Planners, Manitoba Intergovernmental Affairs	<ul style="list-style-type: none"> • General impacts and implications • Development Plan background • Infrastructure capacity • Housing capacity • Population projections • Economic planning • Economic trends • Business trends
Dan McSweeney	INCO Public Relations	<ul style="list-style-type: none"> • INCO's role in Thompson's economy • INCO's employment history • INCO's future development plans
Bill Comaskey	Mayor of Thompson	<ul style="list-style-type: none"> • Compatibility with goals and plans • Development Plan background
Stella Locker	City of Thompson Councillor and Real Estate Agent	<ul style="list-style-type: none"> • General impacts and implications • Compatibility with goals and plans • Development Plan background • Housing availability
Murray Katis	Real Estate agent, Century 21	<ul style="list-style-type: none"> • Housing information • Trends in housing availability (rental vs. purchased)
Ken Allard	Superintendent of Public Works, City of Thompson	<ul style="list-style-type: none"> • Water service, waste disposal and transportation information
Ron Plomp	Chief of the Thompson RCMP detachment	<ul style="list-style-type: none"> • Internal road accident information • Policing information
Bob McGillvray and Dave Hutchinson	Superintendent and Vice-Superintendent of Mystery Lake School Division	<ul style="list-style-type: none"> • Education information: enrolment, capacity and trends
Debbie Nelson	Burntwood Regional Health Authority, Regional. Director of Health Programs (Professional Practice, Medicine, Surgery, Northern Consultation Centre, Staff Development, Emergency Preparedness)	<ul style="list-style-type: none"> • Demographic information • Health services and capacity
Wayne Grier	Real Estate agent, Remax Bee Real Estate	<ul style="list-style-type: none"> • Housing information • Trends in housing availability (rental vs. purchased)
Wayne Morrissey and Roger Hardman	City Clerk City Treasurer	<ul style="list-style-type: none"> • Municipal finance • Development trends
Olaf Lamerz	Acting Head of the	<ul style="list-style-type: none"> • Emergency services capacity and

Interviewee	Affiliation	TOPICS ADDRESSED
	Ambulance and Fire Department	trends
Alec Sutherland	Thompson Recreational Officers	<ul style="list-style-type: none"> • Community recreation • Outdoor recreation – facilities & programs (Thompson)
Karl Kroker	North-South Consultants	<ul style="list-style-type: none"> • Navigation safety and access issues and trends
Carol Hutchinson	Thompson YWCA Director	<ul style="list-style-type: none"> • Socio-economic trends and issues • Community history
Cheryl Nichol森	Thompson Day Care Coordinator	<ul style="list-style-type: none"> • Day care and nursery school trends and capacities
Larry Stefanuik, Jeff Champagne and Rick McIvor	Manitoba Hydro (Thompson Office)	<ul style="list-style-type: none"> • Navigation safety and access • Community history, trends and issues • Outdoor recreation
Gary Wilkie	INCO, Purchasing Department	<ul style="list-style-type: none"> • Economic history • INCO purchasing • Industrial service and supply in Thompson

3.1.1 History and Overview of the Future for Thompson and the LGD of Mystery Lake

It was not until after the Second World War that mining for base metals began in earnest in the Thompson region (Mystery Net Project 2001). On February 4th, 1956, after ten years of exploration, the International Nickel Company (INCO Ltd.) discovered an important nickel ore body in the Thompson area. The “Thompson Nickel Belt” is a geological structure that stretches over 300 kilometres from Moak Lake to south and west of Williams Lake near Grand Rapids, Manitoba. INCO’s Order-in-Council Claims cover an area about 120 kilometres long and 20 kilometres wide, from Moak Lake to Setting Lake (Wyshynski 2001).

With a mining claim of this size and value, a long-term commitment by INCO Ltd. to the area was easily justified (Mystery Net Project 2001). An agreement was signed between INCO and the Manitoba Government whereby INCO would provide \$8.5 million to develop the townsite. This money paid for clearing the land, town planning and installation of basic services. These included such improvements as roads and sidewalks, sewers, a drainage system, a water treatment plant, schools and a civic administration building which also housed the jail and firehall. INCO has also constructed a 32-bed hospital (Wyshynski 2001). The nickel plant (mill, smelter and refinery) and mine site were developed on Cook Lake, and the townsite was established a few kilometres away on the Burntwood River (Buckingham 1988).

During the winter of 1955 to 1956, 24 diesel-powered tractor trains moved 300,000 tons of supplies and equipment from Thicket Portage to the new townsite. Plans had been made for a community of 12,000 people. Development occurred rapidly with the original homes housing the bank, school, store and hospital until more permanent structures were completed (Mystery Net Project 2001).

From 1957 to 1961, Manitoba Hydro built the Kelsey Generating Station on the Nelson River, northeast of Thompson. The Kelsey Generating Station was constructed to supply energy for INCO’s mining and smelting operations in the Moak Lake and Mystery Lake areas. Kelsey was also built to supply electricity to the City of Thompson. Six years after completion, the generating station was linked to the Province’s electrical system (Buckingham 1988).

In 1961, INCO completed its nickel mine complex, and had its underground operations fully underway. This mining operation was North America’s first fully integrated nickel operation (Wyshynski 2001). In that same year, western Canada’s first shopping centre was completed in Thompson’s downtown core. By 1965, the City’s population had reached 8,500 people and the library, theatre and recreation complex were completed. In 1966, Provincial Trunk Highway (PTH) #6 was completed to provide access from Grand Rapids to Thompson (Mystery Net Project 2001).

In 1966, INCO turned over the community infrastructure that it had built to the City of Thompson and in 1967, Thompson was incorporated as a town, with the townsite administered as a Local Government District (LGD) (Wyshynski 2001). The administrator was jointly appointed by INCO Ltd. and the Province of Manitoba (Taunton 1978). In June of 1970, Thompson was incorporated as a City of 20,000 residents, and is now governed by an elected Mayor and Council (Mystery Net Project 2001). The LGD of Mystery

Lake remained to surround the perimeter of the now incorporated City of Thompson, and has continued to operate a number of other facilities, such as the airport (Taunton 1978).

Today, Thompson is the largest mining centre in Manitoba, the largest community in Northern Manitoba and the third largest city in the Province (Buckingham 1988). The City has an area of 16.25 square kilometres and is home to nearly 15,000 residents (Mystery Net Project 2001).

The City also functions as a regional service and trade centre for an additional 60,000 people in the surrounding communities (Thompson Community Planning Services Office 2001). This includes various provincial and federal government services, Aboriginal organizations, goods shipment and transportation (Mystery Net Project 2001).

Thompson's experience with development has been different from other communities in northern Manitoba. Many other northern communities began as Aboriginal hunting and fishing sites, eventually developing into trading post communities, with in-migration of non-Aboriginal and Metis people. Thompson, however, began essentially as a non-Aboriginal community, but in recent years has developed into an important economic and governance center for the Aboriginal population as well. There has also been an increase in the number of Aboriginal residents in Thompson. Together, these have led to the provision of services and resources in Thompson for the local and regional Aboriginal population (Mystery Net Project 2001).

Recently, projects in the community have included:

- Since 1990, INCO Ltd. has spent \$300 million in capital investments for development and expansion of its Thompson mines. In 1995 alone, the company invested \$70 million in capital for Thompson mine development projects (Wyshynski 2001).
- Construction of the \$10 million dollar Country Inn & Suites, the 12,000 square foot commercial complex built across from it and the conversion of the Woolco store to a Wal-Mart (Mystery Net Project 2001).
- Creation of a Burntwood Regional Personal Care Home is currently under consideration. The 40-bed facility is estimated to cost \$7.5 million with a \$300,000 community contribution and the balance funded by Manitoba Health. The proposed facility would be located in Thompson, east of the Thompson General Hospital (Burntwood Regional Health Authority 2001).

There is also a proposal to build a new \$20 million recreation complex that would house a theatre, two indoor hockey rinks, a fieldhouse for basketball, volleyball, tennis, indoor walking and running, weight lifting and a socializing lounge (City of Thompson, personal communication, 2002).

The City of Thompson also continues to actively promote itself as the "Hub of The North". Government, health care, transportation and educational services for northern Manitobans previously accessed through Winnipeg, are being relocated to Thompson (Mystery Net Project 2001). Efforts are being made to further diversify the economy into areas of cold weather testing for automobiles and snowmobiles, as well as manufacturing and various industry sectors. Development of Thompson's tourism industry is another new thrust that is being pursued. The City is also creating a Marketing Plan to promote itself to attract more visitors and investment (City of Thompson, personal communication, 2002).

Despite these new developments, the economic base of the community is still heavily dependent on the mining industry. As a consequence, the City has been subject to periods of expansion and contraction linked to the boom and bust cycles characterizing this industry (Thompson Community Planning Services Office 2001). Since the City's location is directly related to the existence of the high-grade ore body and development of its mining industry, Thompson is a considerable distance from markets and not located on a traditional transportation corridor. Therefore, it does not have easily accessible, economical transportation links with the rest of Canada (Thompson Community Planning Services Office 2001).

In recent years, the City of Thompson has been strongly affected by changes in INCO's level of staffing and grants-in-lieu of taxes payments. INCO Staffing levels continue to be reduced and are now at approximately 1,400 employees, from a peak of approximately 4,400 in the early 1970s. In addition, over the past three years there have been significant reductions in INCO's grants-in-lieu of taxes payments to the City of Thompson. This has resulted in approximately \$1.5 million less in revenues for the City. To deal with this change, Thompson's City Council has been actively cutting costs and focusing on those services that are most used and have the greatest contribution to improving the quality of life of Thompson residents (City of Thompson, personal communication, 2002).

3.1.2 Population

Characteristics of the Thompson population are strongly linked to the community's economic history, as well as its geographic location in northern Manitoba. These and other characteristics of the population are discussed in the following sections. Topics include:

- Total population of Thompson
 - Total Aboriginal population in Thompson
 - Total NCN population in Thompson
- Historic population of Thompson
 - Historic Aboriginal population in Thompson
- Population growth rate of Thompson
 - Population growth rate among Thompson's Aboriginal population
- Projected population of Thompson
 - Projected Aboriginal population in Thompson.

The Aboriginal and NCN portion of the Thompson population are discussed separately for a number of reasons. As will be discussed below, the characteristics of the Thompson population have changed in the last 20 years. Of particular importance has been the increasing Aboriginal population in the community. NCN is discussed separately because it is the nearest First Nation to Thompson, and because there are a significant number of NCN members living in the community. A further reason for discussing these population groups separately is the emergence of Thompson as a regional service and supply centre for the growing Aboriginal population in the north. Several Northern Affairs and First Nation communities are increasingly relying on Thompson for a diversity of consumer and government services.

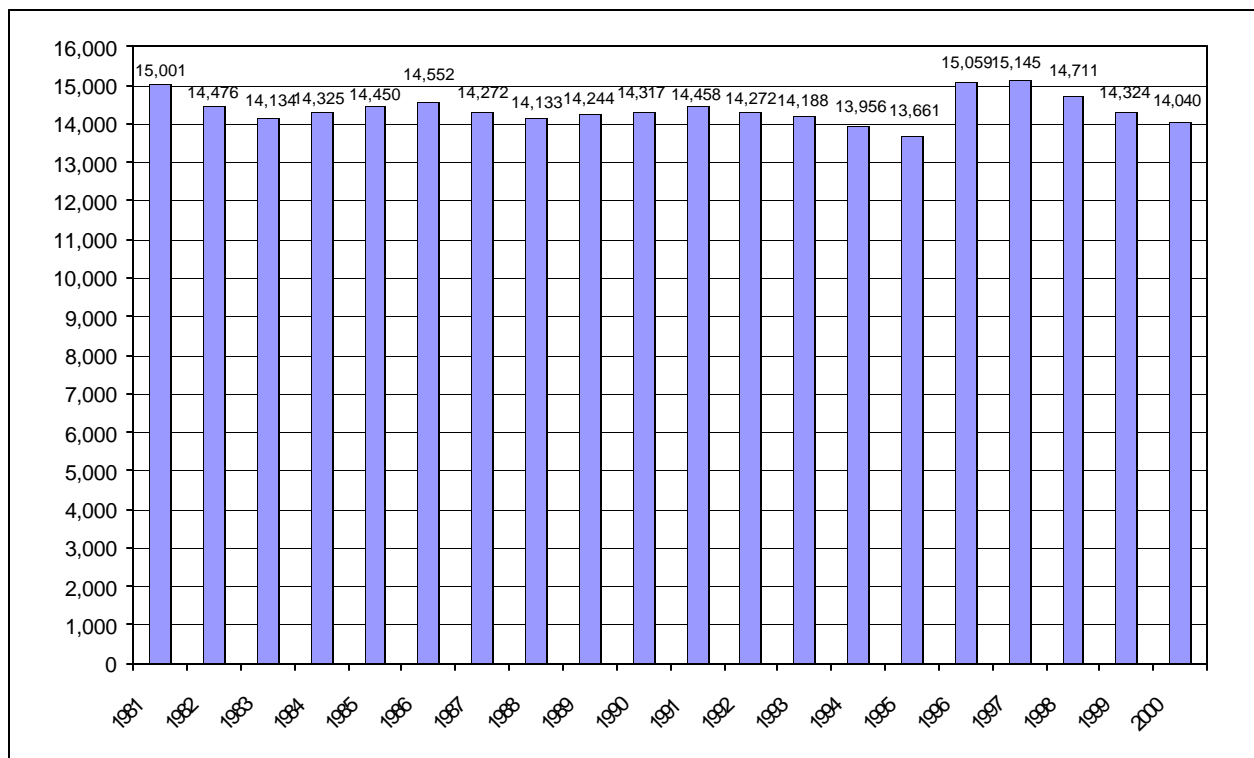
The majority of the demographic information presented in this chapter was derived from Statistics Canada Census data and annual Manitoba Health Population Reports. Alternative data sources are referenced where appropriate. The Census of Canada was used as a data source because it provides complete population characteristics in five year intervals. Manitoba Health population data was used in order to compare and contrast Census data, and also because it provides a more complete account of population numbers. As well, Manitoba Health population counts are completed annually allowing for a more accurate analysis of population trends.

Caution should be used when comparing statistical data for the Aboriginal population across multiple Census years. In 1996 the Census of Canada definition of an Aboriginal person changed to include Registered Indians, those individuals reporting Aboriginal ancestry, those individuals identifying as an Aboriginal person and all Band members. Prior to 1996, and depending on the Census year, the definition of an Aboriginal person included only Registered Indians, those individuals holding Band membership and/or those individuals with Aboriginal ancestry.

3.1.2.1 Historic Population of Thompson

Throughout Thompson's history, total population levels have fluctuated (see Figures 3.2 and 3.3 below). During the 1970s, the early years of Thompson's history, population levels increased annually. This consistent trend of sometimes large annual growth ended in the mid-1970s after which point population levels entered a period of decline. The year 1981 brought a period of stability, and also a slight increase in the total population for that particular year. Fluctuations have continued since 1981, but have been less dramatic than in the early years of Thompson's history (Mystery Net Project 2001).

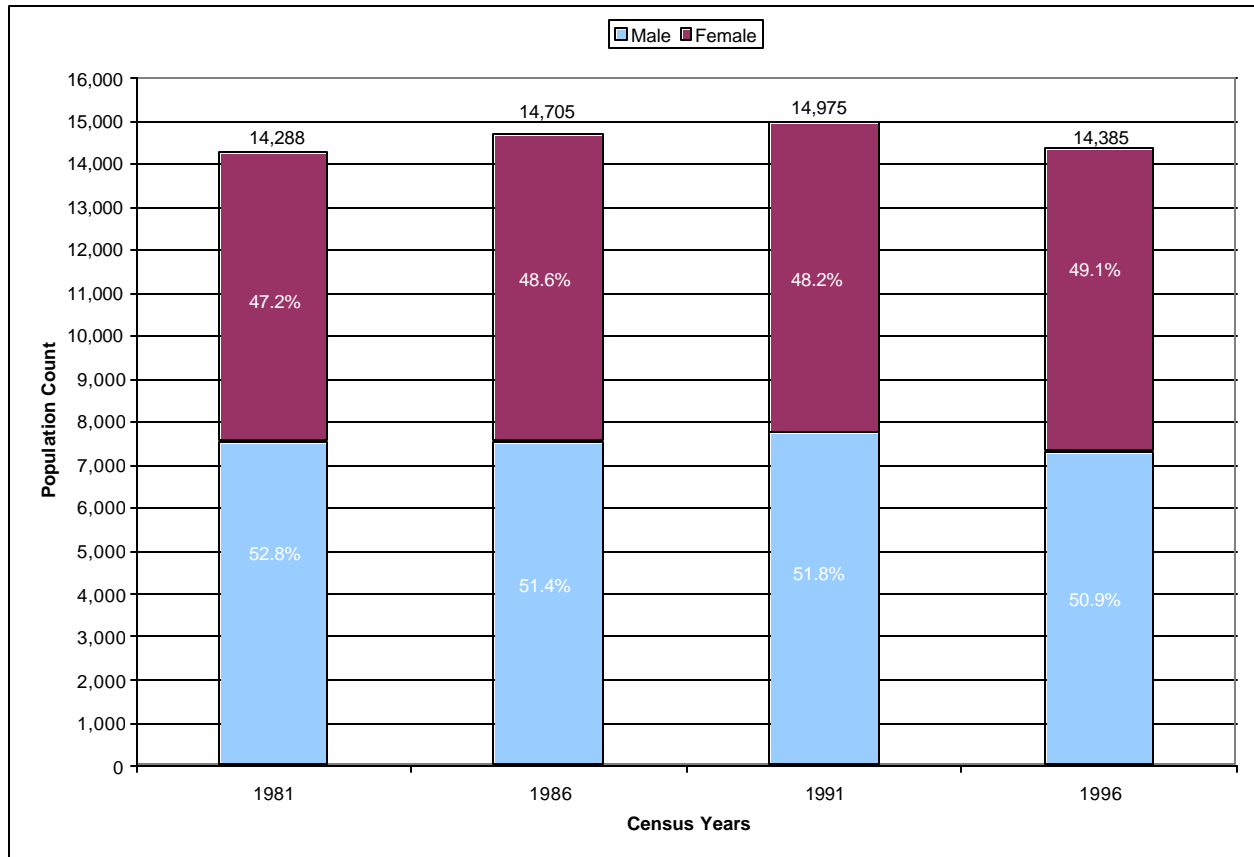
Figure 3.2
Historic Population of Thompson Using Manitoba Health Data: 1981 to 2000



Source:

1. Manitoba Health Population Reports: 1981 to 2000.

Figure 3.3
Historic Population of Thompson Using Statistics Canada Data: 1981, 1986, 1991 and 1996



Sources:

1. Statistics Canada 1981, 1986, 1991 and 1996 Census of Canada.

Note:

1. Totals may not add due to rounding.

Changes in the characteristics of Thompson's population can be linked to three important events/changes in the community:

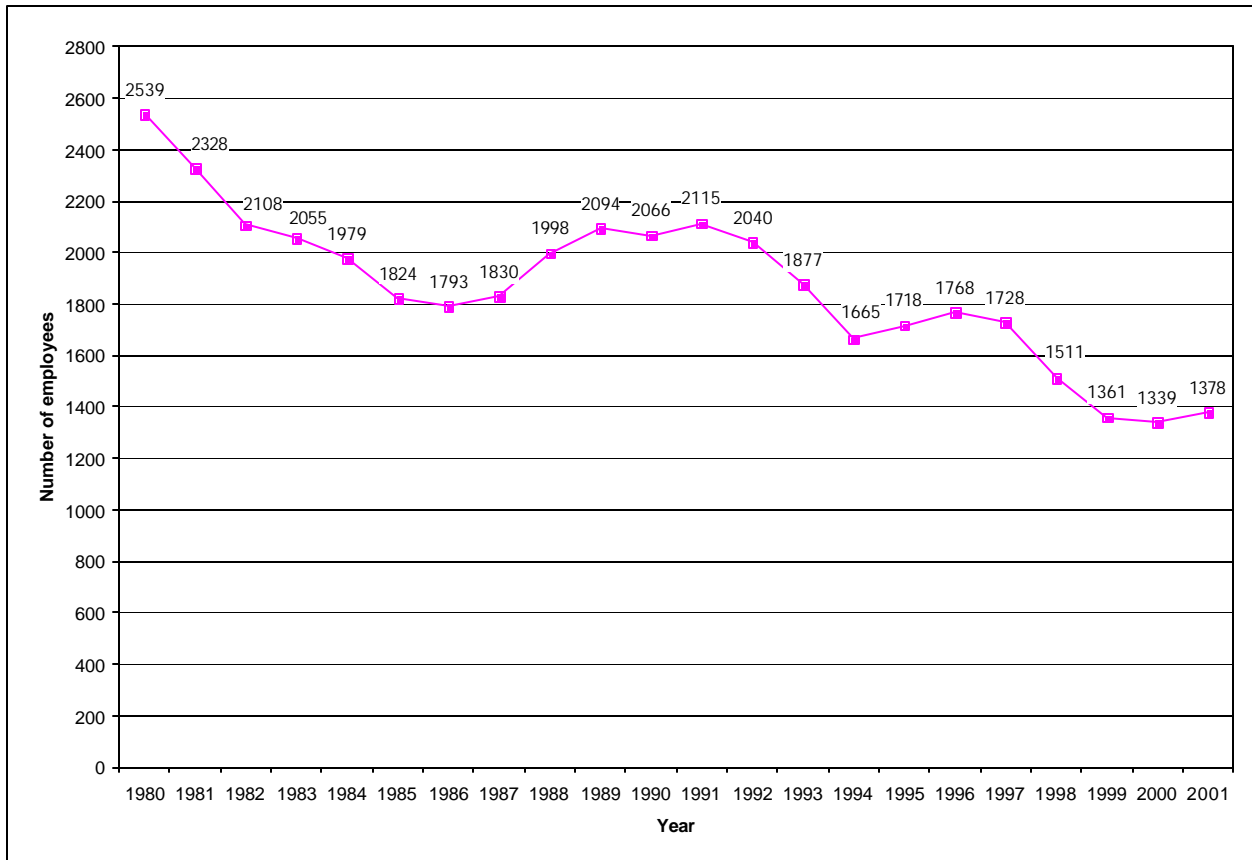
- Changes in INCO's economic role and importance in the community as a result of fluctuating international nickel prices, developments in mining technology and the availability of mineral reserves.
- The development of Thompson as a regional service centre for outlying communities and related growth in the Aboriginal population.
- The emergence of a more stable population base characterized by second generation families and an aging population.

INCO economic activity has been a key factor affecting not only the local economy, but also the population characteristics of Thompson since the community's inception. Changes in the business and economic cycle have, and continue to, strongly influence population levels. As a result, population numbers have declined during times of economic downturn and increased during times of economic

growth. Although tempered somewhat in recent years by other changes in the community, this has resulted in boom-bust cycles both economically and demographically.

Figures 3.4 presents overall employment levels at INCO's Thompson operation. Although INCO remains the single largest employer in Thompson, it should be noted that, with only a few exceptions, employment levels at the firm over the past 20 years have consistently declined. Whereas peak employment at the firm stood at roughly 4,400 people in the 1970's, employment as of December 2001 was estimated at 1,340 people (INCO Ltd. 2001). The overall decline in employment levels over the past 20 years reflects the changing status of operations in Thompson. The most accessible and profitable ore sources have been mined from the Thompson site, forcing the company to source deeper and deeper ore bodies. The result has been twofold. First, the costs of operation at the Thompson site have been steadily increasing. Second, the Thompson operation has increased its dependence on external feed, which is less profitable and requires fewer employees (INCO, personal communication, 2002). In April of 2000, INCO undertook a major capital project to deepen the Birtchtree Mine. The deepening of the mine is expected to expand the operation's lifespan by approximately 15 years. Seven million dollars has also been committed to further define the lower depths of the 1-D ore body. As well, INCO has undertaken a copper rationalization project that will change the way the Thompson Division processes copper. This initiative is expected to reduce energy and warehousing costs (INCO Ltd. 2001).

Figure 3.4
INCO Employment Levels in Thompson: 1980 to 2001



Source:

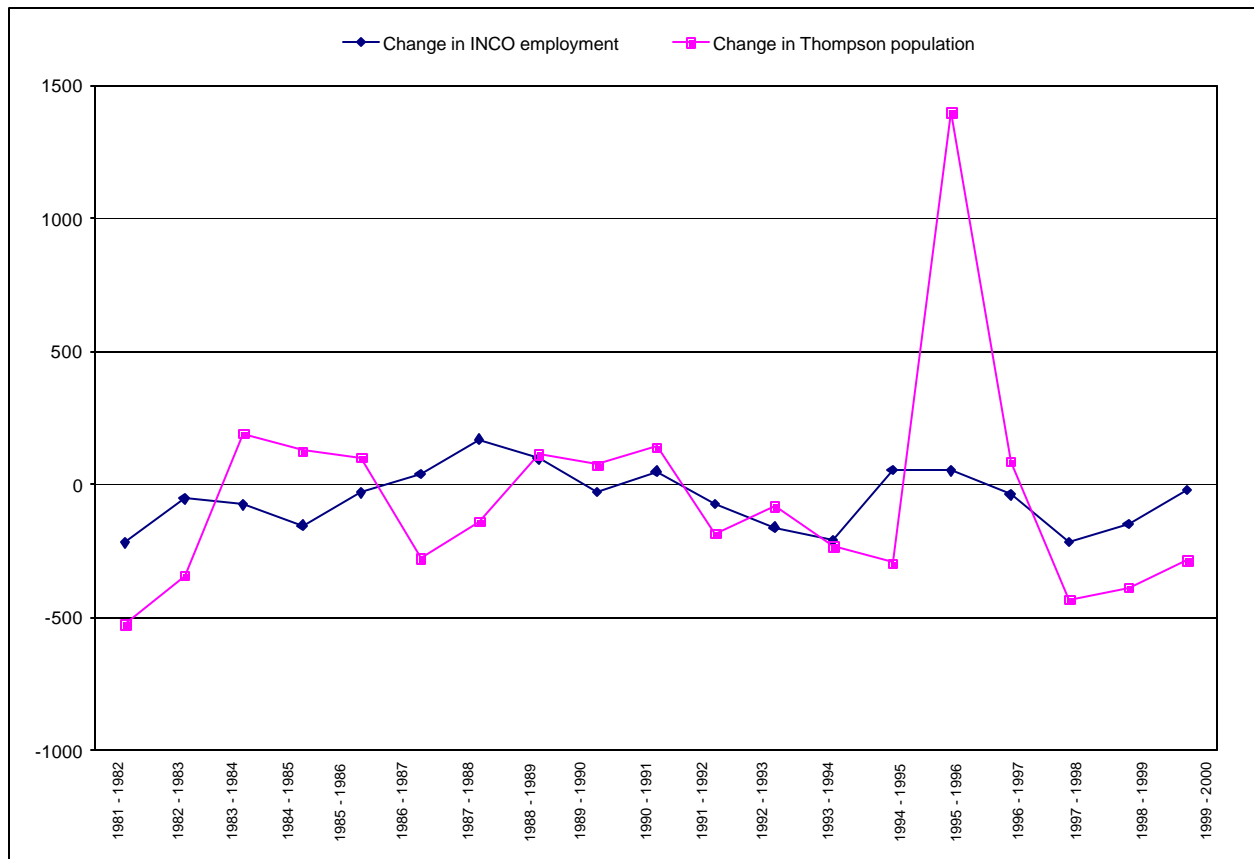
1. The employment statistics obtained from INCO Ltd in February, 2002.

Note:

1. Employment statistics include full and part-time workers.

Figure 3.5 relates the changes in employment levels at INCO, shown in the Figure 3.4 above, to the overall observed change in total population numbers for Thompson. Figure 3.6 relates the overall trend in INCO employment levels to the trend observed in both the total and male labour force from 1981 to 2000. As can be seen in both figures, with the exception of a few years the overall trends in numbers are very similar. In most years that INCO has reduced its workforce, a concurrent decline in population numbers was observed.

Figure 3.5
Comparison of Changes in INCO Employment Levels and the
Thompson Population: 1981 to 2000



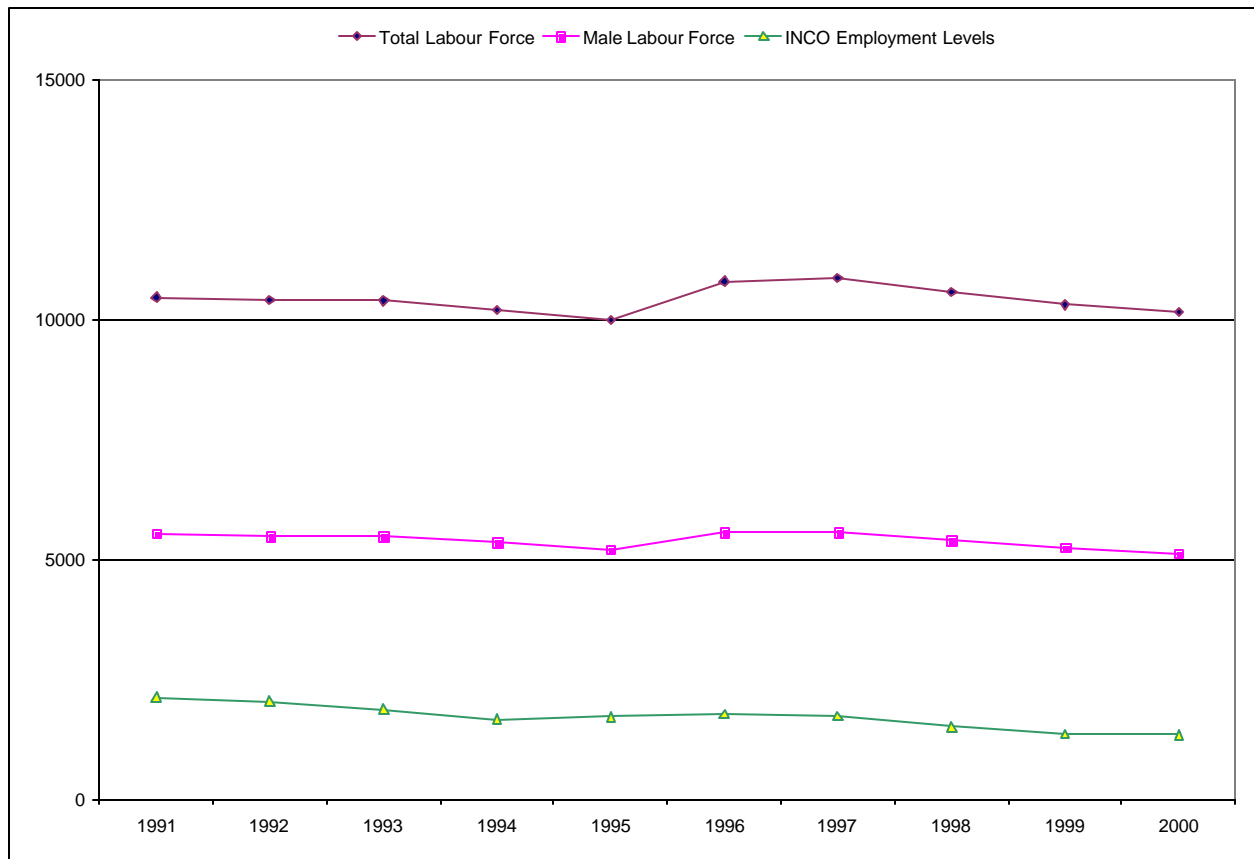
Sources:

1. INCO employment statistics were received from INCO, Thompson Operations in February, 2002.
2. Population statistics were taken from the Manitoba Health Population Reports (1981 to 2000).

Note:

1. The chart above represents the change in total numbers observed between years for both INCO employment and Thompson population. It does not represent the total number of employees at INCO, or the total number of people living in Thompson, at any given point. For example, between 1982 and 1983 the total Thompson population declined by 342. This decline is represented by the point on the chart for that period.

Figure 3.6
Comparison of the Observed Trend in INCO Employment and
Labour Force Numbers in Thompson: 1991 to 2000



Sources:

1. INCO employment statistics were received from INCO, Thompson Operations in February, 2002.
2. Statistics for the total and male potential labour force in Thompson were derived from the Manitoba Health Population Reports (1981 to 2000).

Note:

1. The potential labour force refers to all persons in a given population, excluding institutional residents, age 15 and over. The potential labour force includes members of the population 65 years of age and over. Potential labour force numbers may be overstated for this reason, as much of the population retires at, or close to, the age of 65.

The second major factor influencing the population characteristics of Thompson has been its development as a regional service and supply center for much of the northern Manitoba region. This development, over the past ten to fifteen years, has resulted in increased migration into Thompson from outlying communities. This relatively new trend has impacted the structure and composition of Thompson's population and stressed the capacity of some social services. In-migration from Aboriginal outlying communities is most commonly stimulated by the need, or demand, for services such as health, education and recreation. Other factors include housing availability, employment opportunities and more general quality of life issues. This form of in-migration is expected to increase in the future (North Central Development Corporation, personal communication, 2002; Ma Mow We Tak, personal communication, 2002; YWCA, personal communication, 2002).

The third main factor influencing Thompson's population has been the development of a stable population base, represented by second and third generation families as well as an aging population. Table 3.2 and Figures 3.7 and 3.8 below highlight changes observed in Thompson's age distribution since 1981. Two trends in the population characteristics of Thompson can be observed in these figures. First, the female portion of the population in the community has gradually increased over time. This trend was observed in both the Census and Manitoba Health (not shown) population data. The exception to this trend was the Census year 1991, in which a slight decline in the female portion of the population was observed. Second, the age structure of the population changed over the period 1981 to 1996. Specifically, an increase in the population aged 65 and older was observed over these Census years from 0.9 per cent in 1981 to 1.6 per cent in 1996. The emergence of an elderly population in Thompson is a relatively new phenomenon driven by the presence of second and third generation families in the community. Whereas in the early days of the community's history, the population was fairly young and somewhat transient, a number of people have 'put down roots' and chosen to raise families in the community. As well, a number of community members are choosing to remain in Thompson after retirement (YWCA, personal communication, 2002; City of Thompson, personal communication 2002).

Table 3.2**Historic Age Characteristics of the Population of Thompson: 1981, 1986, 1991 and 1996**

Age Characteristics of the Population	1981 (Number and % of the total population)	1986 (Number and % of the total population)	1991 (Number and % of the total population)	1996 (Number and % of the total population)
Total-All persons	14,288	14,705	14,975	14,385
Age 0-4	1,620 (11.3%)	1,575 (10.7%)	1,515 (10.1%)	1,460 (10.1%)
Age 5-9	1,645 (11.5%)	1,540 (10.5%)	1,445 (9.6%)	1,450 (10.1%)
Age 10-14	1,520 (10.6%)	1,520 (10.3%)	1,380 (9.2%)	1,300 (9.0%)
Age 15-19	1,445 (10.1%)	1,505 (10.2%)	1,425 (9.5%)	1,200 (8.3%)
Age 20-24	1,515 (10.6%)	1,340 (9.1%)	1,365 (9.1%)	1,140 (7.9%)
Age 25-34	3,085 (21.6%)	2,845 (19.3%)	2,965 (19.7%)	2,815 (19.6%)
Age 35-44	1,965 (13.7%)	2,430 (16.5%)	2,485 (16.6%)	2,265 (15.7%)
Age 45-54	950 (6.6%)	1,260 (8.6%)	1,645 (11.0%)	1,830 (12.7%)
Age 55-64	400 (2.8%)	490 (3.3%)	565 (3.8%)	680 (4.7%)
Age 65 and over	130 (0.9%)	200 (1.4%)	210 (1.4%)	235 (1.6%)
Average Age of the Population (years)	-	25.1	26.6	27.3
Total per cent of the population age 15 and over	66.3%	68.4%	71.2%	70.7%

Sources:

1. Statistics Canada 1981 Census of Canada
2. Statistics Canada 1986 Census of Canada
3. Statistics Canada 1991 Census of Canada
4. Statistics Canada 1996 Census of Canada

Note:

1. Totals may not add due to rounding.

3.1.2.1.1 Historic Aboriginal Population of Thompson

Growth among Thompson's Aboriginal population has occurred in recent years and has been greater and more rapid than that seen for the total population. The Aboriginal population increased dramatically between the Census years 1986 and 1991, and then decreased slightly between 1991 and 1996. Between 1986 and 1991 the ratio of males to females also changed. In 1986 the male to female ratio was 1.02:1. However, by 1991 there were more females than males resulting in a male to female ratio of 1:1.13. The male to female ratio for the Census year 1996 continued this relationship, and was calculated, using the new Census definition of an Aboriginal person, at 1:1.17.¹³

Table 3.3 and Figure 3.7 highlight the trends in population levels for the total Aboriginal population by gender. From Table 3.3 it should be noted that within the Aboriginal population in Thompson the proportion of individuals between the ages 35 and 64 increased substantially from 11.8% in 1981 to 21.7% in 1996. In contrast to this, the proportion of individuals between the ages of 15 and 34 years decreased from 42.9% in 1981 to 33.4% in 1996. The proportion of individuals over the age of 65 years increased slightly over the Census periods 1981 to 1996, whereas the proportion 14 years and under fluctuated slightly.

Table 3.3
Historic Age and Sex Characteristics of the Aboriginal Population
of Thompson: 1981, 1986, 1991 and 1996

Age	Total Aboriginal Population of Thomson			
	1981	1986	1991	1996
Total – all persons	1,610	3,015	4,225	3,890
0-14 years	730 (45.3%)	1,315 (43.6%)	1,770 (41.9%)	1,705 (43.8%)
15-64 years	860 (53.4%)	1,670 (55.4%)	2,415 (57.2%)	2,145 (55.1%)
15-34 years	675 (42.9%)	1,125 (37.3%)	1,640 (38.8%)	1,300 (33.4%)
35-64 years	190 (11.8%)	545 (18.1%)	775 (18.3%)	845 (21.7%)
65 + years	10 (0.6%)	30 (1.0%)	30 (0.7%)	45 (1.2%)

Sources:

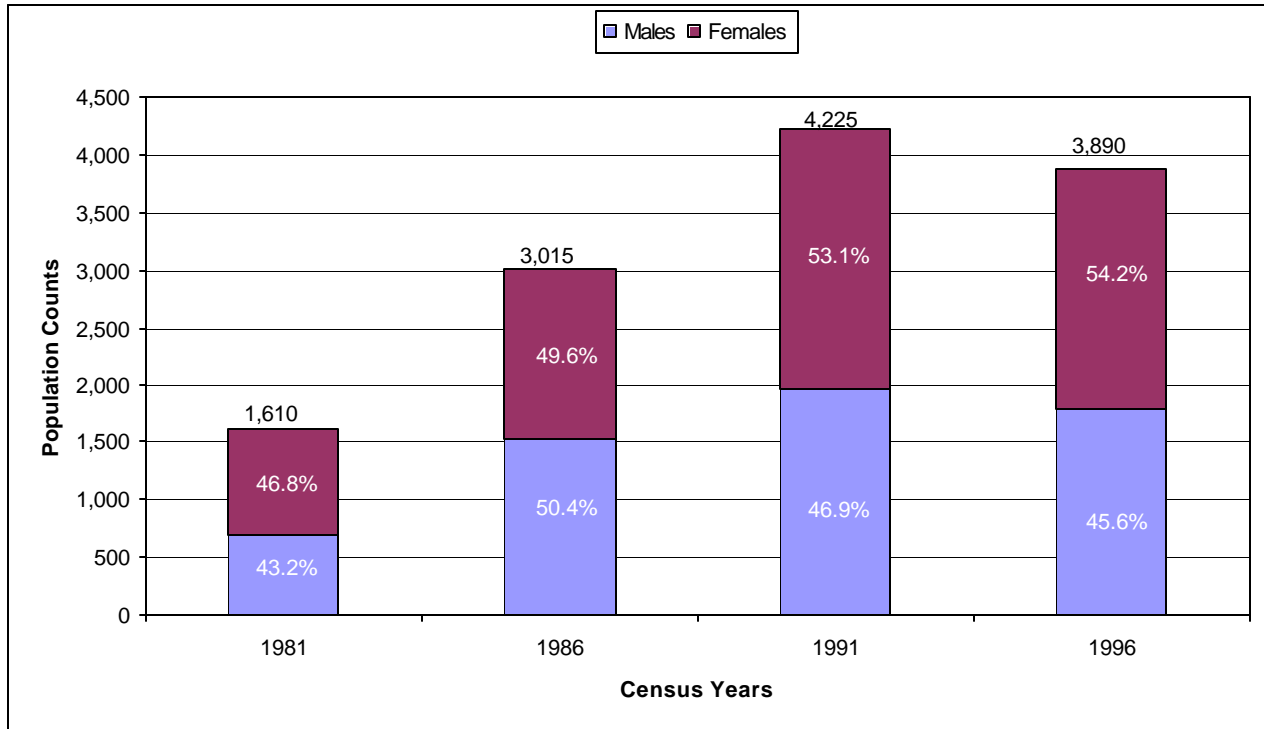
1. Statistics Canada 1981, 1986, 1991 and 1996 Census of Canada
2. Data received from Indian and Northern Affairs Canada, November 18 2001

Notes:

1. With the exception of 1981, the definition of Aboriginal in all years referred to in this table includes Registered Indians, those holding Band membership and/or those individuals reporting Aboriginal ancestry. Data from the 1996 Census of Canada has been adjusted to align with the earlier Canadian Census definition of an Aboriginal person.
2. Incomplete data: 20% sample data.
3. Totals may not add due to rounding.

¹³ Prior to 1996, and depending on the year, the definition of an Aboriginal person may only have included Registered Indians, those individuals reporting Aboriginal Ancestry and/or those holding band membership. In 1996, those individuals identifying as an Aboriginal were added to the classification.

Figure 3.7
Total Aboriginal Population of Thompson
by Gender: 1981, 1986, 1991 and 1996



Sources:

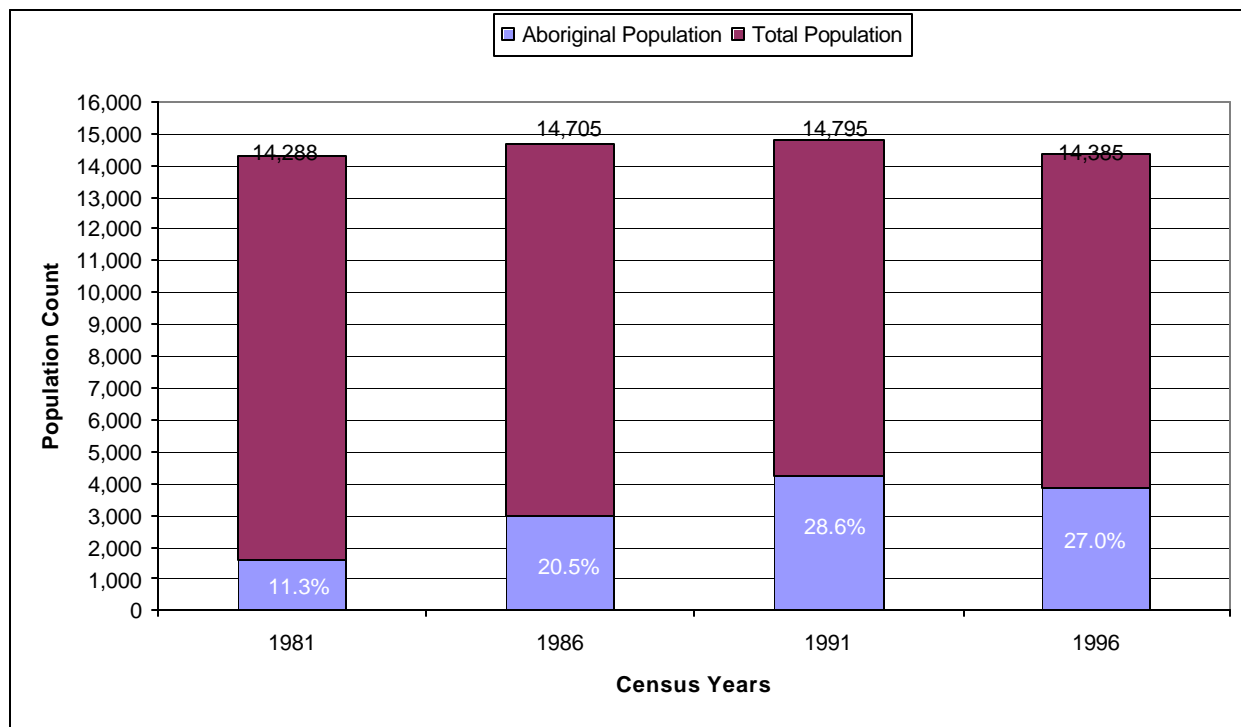
1. Statistics Canada 1981, 1986, 1991 and 1996 Census of Canada.
2. Data received from Indian and Northern Affairs Canada, November 18, 2001.

Notes:

1. With the exception of 1981, the definition of Aboriginal in all years referred to in this table includes Registered Indians, those holding Band membership and/or those individuals reporting Aboriginal ancestry. Data from the 1996 Census of Canada have been adjusted to align with the earlier Census of Canada definition of an Aboriginal person.
2. Incomplete data: 20% sample data.
3. Totals may not add due to rounding.

Figure 3.8 below compares the total Thompson population and the proportion of this population that is Aboriginal. As can be seen in the chart, the proportion of the total population of Aboriginal ancestry increased between the Census years 1981 and 1991. This proportion decreased slightly between 1991 and 1996, but remained higher than the 1981 levels.

Figure 3.8
Comparison of the Aboriginal and Total Population of Thompson: 1981, 1986, 1991 & 1996



Sources:

1. Statistics Canada 1981, 1986, 1991 and 1996 Census of Canada.
2. Data received from Indian and Northern Affairs Canada, November 18, 2001.

Notes:

1. With the exception of 1981, the definition of Aboriginal in all years referred to in this table includes Registered Indians, those holding Band membership and/or those individuals reporting Aboriginal ancestry. Data from the 1996 Census of Canada has been adjusted to align with the earlier Census of Canada definition of an Aboriginal person. Caution should be used when comparing data from the different years.
2. Incomplete data: 20% sample data.
3. Totals may not add due to rounding.

3.1.2.2 Annual Growth Rate for the Total Population

The growth rates for the population of Thompson reflect the overall trends in population numbers discussed above. Using data derived from the Census of Canada, a positive growth rate for the total population was calculated between the Census periods 1981 and 1986 as well as 1986 and 1991. Population decline was observed between 1991 and 1996. It should be noted that during the 1981 to 1986 period the female population grew at a greater rate than the male population. The reverse was true for the 1986 to 1991 period, where the male proportion of the population grew at a rate greater than the female population. During the 1991 to 1996 period the male population declined at a rate greater than that of the female population.

Table 3.4 highlights annual growth rates of the Thompson population using data obtained from both the Census of Canada and the Manitoba Health Population Reports. The two sources use different methods for data collection, and as a result variation between the annual growth rates occurs.

Table 3.4
Annual Growth Rates for the Population of Thompson: 1981 to 2000

Time Period	Statistics Canada ¹			Manitoba Health ²		
	Total	Male	Female	Total	Male	Female
1981 to 1986	0.6%	0.1%	1.1%	-0.6%	N/A	N/A
1986 to 1991	0.1%	0.5%	0.3%	-0.1%	N/A	N/A
1991 to 1996	-0.6%	-1.2%	-0.4%	0.8%	0.5%	1.2%
1996 to 2000	N/A	N/A	N/A	-1.7%	-2.2%	-1.3%
Overall - 1981 to 1996	0.1%	-0.2%	0.3%	0.03%	N/A	N/A

Sources:

1. Statistics Canada 1981, 1986, 1991 and 1996 Census of Canada
2. Manitoba Health 2000 Population Report

3.1.2.2.1 Annual Growth Rate for the Aboriginal Population

Annual growth was observed during the period 1981 to 1991 and declined between 1991 and 1996. It should be noted, though, that the annual growth rate among the Aboriginal population was substantially greater than that of the total population during the 1986 to 1991 period. Annual growth rates for both Census periods were higher for the female population than the male population.

Table 3.5 highlights the annual growth rates for the total Aboriginal population by gender, for five-year intervals from the Census years 1986, 1991 and 1996.

Table 3.5
Annual Growth Rates of the Aboriginal Population in Thompson: 1981 to 1996

Time Period	Total	Male	Female
1981 to 1986	13.4%	16.9%	10.4%
1986 to 1991	7.0%	5.4%	8.4%
1991 to 1996	-1.6%	-2.2%	-1.2%
Overall – 1981 to 1996	6.1%	6.5%	5.8%

Source:

1. Statistics Canada 1986, 1991 and 1996 Census of Canada

Notes:

1. It should be noted that annual growth rates for the 1981 to 1986 and 1986 to 1991 period may be overstated due to the passing of Bill C-31 in 1985. A number of Aboriginal individuals in Thompson may have 'regained' their Aboriginal status during these periods, as Bill C-31 changed the definition of an "Aboriginal Person" allowing individuals who had either voluntarily or involuntarily lost their status (become disenfranchised) under the Indian Act to re-register. The Bill was of particular significance to Indian women who under the previous stipulations of the Indian Act lost their status upon marrying a non-Indian person.

3.1.2.3 Total Current Population of Thompson

Thompson is home to the third largest population in the Province of Manitoba (Mystery Net Project 2001). According to the 1996 Census of Canada, the total population of the City was 14,385 people in 1996, representing 1.3 per cent of Manitoba's total population (Statistics Canada 1996). More recent Manitoba Health data place the population of Thompson as of June 1, 2000 at 14,040 people, representing 1.2 per cent of the provincial population (Manitoba Health 2000).

As seen in [Table 3.6](#) and [Figure 3.9](#), Thompson's population is relatively young when compared to the total population of the Province.¹⁴ In 1996, 46.0 per cent of the Thompson population was under the age of 25, with only 1.7 per cent over the age of 65. In comparison, 35.8 per cent of the 1996 Manitoba population was under the age of 25, with 14.0 per cent aged 65 and older (Statistics Canada 1996). These differences were mirrored in data collected by Manitoba Health for the year 2000. In this year, 43.5 per cent of the Thompson population was found to be under the age of 25, as compared to the Manitoba average of 38.4 per cent. As well, only 2.6 per cent of Thompson residents were aged 65 and over, as compared to the Manitoba average of 13.6 per cent (Manitoba Health 2000).

The distribution of males and females within the Thompson population also varies from that of the provincial population. In 1996, the male to female ratio for the City was calculated at 1.03:1. For the entire Province, the ratio was reversed with a 1:1.03 ratio observed between males and females (Statistics Canada 1996). According to Manitoba Health data, males continued to outnumber females in Thompson in 2000. During that year, the male to female ratio for the City was 1.02:1, as compared to the unchanged provincial ratio of 1:1.03 (Manitoba Health 2000).

¹⁴ Table 3.6 presents both Manitoba Health and Statistics Canada data. Differences in population totals and age distributions should be noted. These differences result from the different data collection methods employed by the two sources. Whereas Census of Canada data are collected and presented by Census division, Manitoba Health population data are collected and presented by postal code or location of residence.

Table 3.6
Age and Sex Distribution in the City of Thompson: 1996 and 2000

Age Characteristics of the Population	1996 ¹ Statistics Canada Data			2000 ² Manitoba Health Data		
	Total (# and % of total population)	Male (# and % of total population)	Female (# and % of total population)	Total (# and % of total population)	Male (# and % of total population)	Female (# and % of total population)
Total All Persons	14,385	7,315 (50.8%)	7,075 (49.2 %)	14,040	7,089 (50.5%)	6,951 (49.5%)
Age 0-4	1,460 (10.1%)	740 (5.1%)	720 (5.0%)	1,267 (9.0%)	629 (4.5%)	638 (4.5%)
Age 5-9	1,450 (10.1%)	760 (5.3%)	690 (4.8%)	1,333 (9.4%)	661 (4.7%)	672 (4.8%)
Age 10-14	1,300 (9.0%)	635 (4.4%)	665 (4.6%)	1,289 (9.2%)	677 (4.8%)	612 (4.4%)
Age 15-19	1,200 (8.3%)	580 (4.0%)	620 (4.3%)	1,241 (8.8%)	611 (4.4%)	630 (4.5%)
Age 20-24	1,140 (7.9%)	540 (3.8%)	600 (4.2%)	1,003 (7.1%)	474 (3.4%)	529 (3.8%)
Age 25-29	1,345 (9.4%)	670 (4.7%)	675 (4.7%)	1,083 (7.7%)	523 (3.7%)	560 (4.0%)
Age 30-34	1,470 (10.2%)	725 (5.0%)	745 (5.2%)	1,224 (8.7%)	608 (4.3%)	616 (4.4%)
Age 35-39	1,195 (8.3%)	615 (4.3%)	580 (4.0%)	1,237 (8.8%)	596 (4.2%)	641 (4.6%)
Age 40-44	1,070 (7.4%)	510 (3.5%)	560 (3.9%)	1,074 (7.6%)	549 (3.9%)	525 (3.7%)
Age 45-49	1,100 (7.6%)	595 (4.1%)	505 (3.5%)	1,054 (7.5%)	503 (3.6%)	551 (3.9%)
Age 50-54	730 (5.1%)	430 (3.0%)	300 (2.1%)	980 (7.0%)	565 (4.0%)	415 (2.9%)
Age 55-59	450 (3.1%)	255 (1.8%)	195 (1.4%)	560 (4.0%)	326 (2.3%)	234 (1.7%)
Age 60-64	230 (1.6%)	135 (0.9%)	95 (0.6%)	337 (2.4%)	192 (1.4%)	145 (1.0%)
Age 65-69	110 (0.8%)	55 (0.4%)	55 (0.4%)	162 (1.2%)	93 (0.7%)	69 (0.5%)
Age 70-74	65 (0.5%)	30 (0.2%)	35 (0.2%)	89 (0.6%)	39 (0.3%)	50 (0.4%)
Age 75+	60 (0.4%)	20 (0.1%)	40 (0.3%)	107 (0.8%)	43 (0.3%)	64 (0.5%)
Per cent of the total population age 15 and over	70.6%	35.8%	34.8%	72.2%	36.5%	35.9%

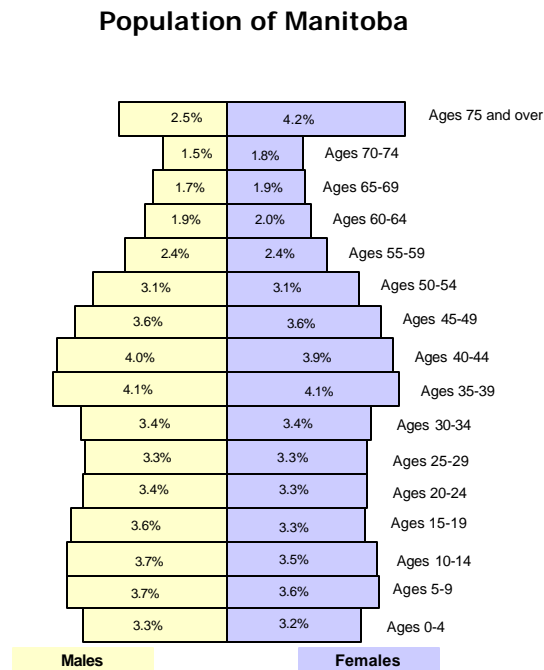
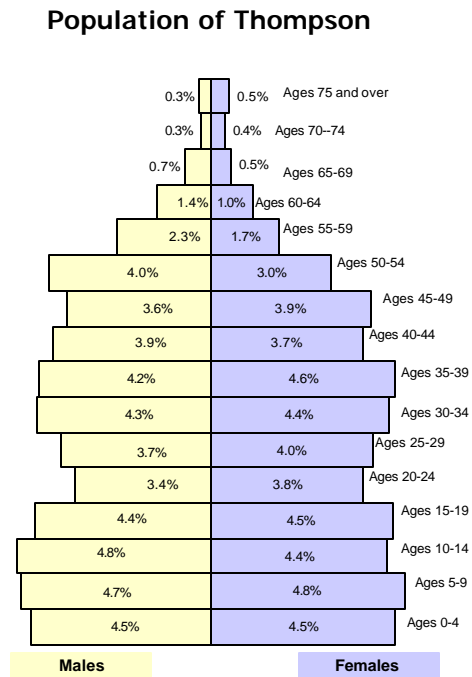
Sources:

1. Statistics Canada 1996 Census of Canada
2. Manitoba Health Population Report, June 2000

Notes:

1. Population data derived from the Manitoba Health Reports is collected according to postal code (location of residence).
2. Totals derived from the 1996 Census of Canada may not add due to rounding.

Figure 3.9
Population Distribution of Thompson and Manitoba by
Age and Sex – Per Cent of Total Population of Males and Females: 2000



Source:

1. Manitoba Health Population Report 2000.

3.1.2.3.1 Total Aboriginal Population in Thompson

There is high Aboriginal representation in the Thompson population (YWCA, personal communication, 2002; Ma Mow We Tak, personal communication, 2002). As of the 1996 Census of Canada, the total Aboriginal population of Thompson was 3,955 people, representing 27.5 per cent of the community's total population. Of this, 1,820 (46%) were male and 2,130 (54%) were female. The female proportion of the Aboriginal population was greater than that of the total Thompson population. This was represented by a male to female ratio among Thompson's Aboriginal population of 1:1.17, as compared to 1.03:1 for the total Thompson population. Although the Aboriginal population was calculated at 27.5 per cent of the total population at the time of the 1996 Census, local estimates exceed this figure (Ma Mow We Tak, personal communication, 2002; City of Thompson, personal communication, 2002; North Central Development Corporation, personal communication, 2002). In fact, some place the portion of the Thompson population that is Aboriginal at 40 per cent or larger (City of Thompson, personal communication, 2002; Manitoba Intergovernmental Affairs, personal communication, 2002). This may be because there is a portion of the Aboriginal population in Thompson that is fairly transient, and as a result, difficult to account for.

Much like the total population of Thompson, the Aboriginal population in the City can be described as relatively youthful. In 1996, 60 per cent of Thompson's Aboriginal population was under the age of 25, and 43 per cent were under the age of 15. In comparison, only 1 per cent of the population was over the age of 65. [Table 3.7](#) and [Figure 3.10](#) highlight the age and sex characteristics of the Aboriginal population residing in the City of Thompson.

Table 3.7
Age and Sex Distribution of the Aboriginal Population in Thompson: 1996

Age Characteristics of the Population	Total (number and % of total population)	Males (number and % of total population)	Females (number and % of total population)
Total – age groups	3,955	1,820 (46.0%)	2,130 (54.0%)
0-4 years	600 (15.2%)	320 (8.1%)	280 (7.1%)
5-9 years	570 (14.4%)	275 (6.9%)	295 (7.4%)
10-14 years	535 (13.5%)	300 (7.6%)	235 (5.9%)
15-19 years	365 (9.2%)	180 (4.5%)	185 (4.7%)
20-24 years	305 (7.7%)	125 (3.2%)	180 (4.5%)
25-29 years	270 (6.8%)	75 (1.9%)	200 (5.0%)
30-34 years	380 (9.6%)	150 (3.8%)	235 (5.9%)
35-39 years	275 (6.9%)	110 (2.8%)	165 (4.2%)
40-44 years	230 (5.8%)	110 (2.8%)	110 (2.8%)
45-49 years	165 (4.2%)	70 (1.8%)	95 (2.4%)
50-54 years	110 (2.8%)	60 (1.5%)	55 (1.4%)
55-59 years	75 (1.9%)	20 (0.5%)	55 (1.4%)
60-64 years	20 (0.5%)	10 (0.3%)	15 (0.4%)
65-69 years	10 (0.3%)	-	-
70-74 years	30 (0.8%)	10 (0.3%)	20 (0.5%)
75+	-	-	-
Per cent of the total population ages 15 and over	56.5%	23.4%	33.2%

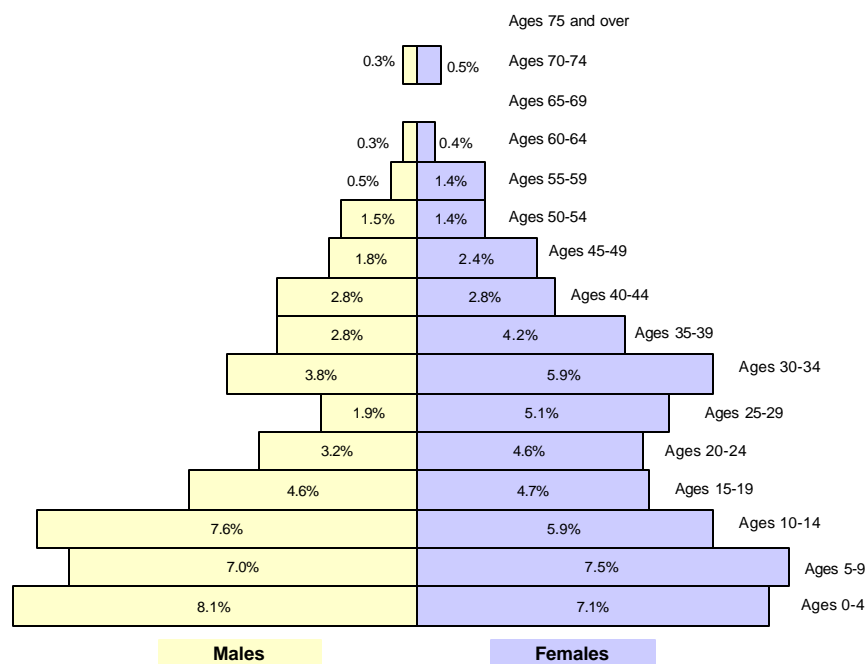
Sources:

1. Statistics Canada 1996 Census of Canada
2. Data Received from Indian and Northern Affairs Canada, December 18, 2001

Notes:

1. In 1996, the Census of Canada classification of an Aboriginal person changed. Prior to 1996, and depending on the year, the definition of an Aboriginal person may only have included Registered Indians, those individuals reporting Aboriginal Ancestry and/or those holding band membership. In 1996, those individuals identifying as an Aboriginal were added to the classification. In the table above, the total Aboriginal population refers to all Registered Indians, all persons reporting being of Aboriginal Ancestry, all band members, as well as all persons identifying as Aboriginal.
2. Incomplete data: 20% sample data.
3. Totals may not add due to rounding.

Figure 3.10
Age and Sex Characteristics of the Aboriginal Population in Thompson: 1996



Sources:

1. Statistics Canada 1996 Census of Canada
2. Data Received from Indian and Northern Affairs Canada, December 18, 2001

Notes:

1. In 1996, the Census of Canada classification of an Aboriginal person changed. Prior to 1996, and depending on the year, the definition of an Aboriginal person may only have included Registered Indians, those individuals reporting Aboriginal Ancestry and/or those holding band membership. In 1996, those individuals identifying as an Aboriginal were added to the classification. In the table above, the total Aboriginal population refers to all Registered Indians, all persons reporting being of Aboriginal Ancestry, all band members, as well as all persons identifying as Aboriginal.
2. Incomplete data: 20% sample data.
3. Totals may not add due to rounding.

Total NCN Population in Thompson

According to the 2001 Band Members List for the Nisichawayasihk Cree Nation (NCN), there are 255 NCN members residing in Thompson. This represents approximately 6 per cent of the total Aboriginal population and 2 per cent of the total population in Thompson, considering total and Aboriginal population levels at the time of the 1996 Census. Of the 259 NCN members identified in Thompson, approximately 160, or 63 per cent, were female. This resulted in a 1:1.7 male to female relationship. It should be noted, however, that the NCN population in Thompson varies with in- and out-migration. This number, therefore, should not be thought of as a complete and accurate assessment of the population, but rather an approximation of total numbers at one point in time.

Migration from the Nelson House Reserve to the City of Thompson has been increasing over time. Reasons for this migration include a shortage of housing on reserve, lack of educational opportunities

(particularly post-secondary), and health issues requiring a greater level of health services than are available in Nelson House. Young single women between the ages of 15 and 25 who either have young children or are pregnant tend to migrate more than other groups (Dennis Linklater and Community Consultants, personal communication, 2002). The predominance of migration among young women is consistent with the male to female ratio of NCN members living in Thompson highlighted above.

3.1.2.4 The Projected Population of Thompson

Population projections for Thompson were developed to the year 2011. The projections were calculated using the following population data:

- **Population:** Total population by age and sex for the years 1981, 1986, 1991 and 1996, as presented in the previous sections. Population statistics for these years were obtained from the 1996 Census of Canada.
- **Fertility Rates:** Current and projected fertility rates by age for females between the ages of 15 and 49. Fertility rates for the years 1996 to 2000 were provided by the Manitoba Bureau of Statistics and apply to the aggregate population of Manitoba. Fertility rates for the years 2001 to 2011 were projected based on trends seen from 1996 to 2000.
- **Survival Rates:** Current and projected survival rates for those members of the Thompson population between the ages of zero and 85 or greater were calculated using Manitoba Death Rates in 1996 provided by the Manitoba Bureau of Statistics.

Using these data, population projections for the City of Thompson were calculated by determining the number of children under the age of one (based on the number of females between the ages of 15 and 49 and their fertility rates), the number of residents between the ages of one and 85 or greater (based on the age specific survival rates from year to year) and estimates of the number of in and out-migrants in the City.

Two projection scenarios were developed representing low and high population growth:

Low Growth Scenario: The low growth scenario was developed by determining the annual growth rate between 1981 and 1996, and applying that rate to future populations in the year 2001, 2006 and 2011. This scenario assumes that trends in migration and changing population compositions will continue, as demonstrated historically.

High Growth Scenario: The high growth scenario was developed assuming that fertility rates declined at a rate of 1.0 per cent per year, while survival rates remained constant. Net-migration was assumed to be zero.

Table 3.8 below shows the projected population changes for Thompson, under the low and medium growth rate scenario, in the years 2001, 2006 and 2011.

Table 3.8

**Projected Thompson Population Using
Low and High Growth Scenarios: 2001, 2006 and 2011**

Year	Low Growth Scenario	High Growth Scenario
2001	14,418	15,507
2006	14,450	16,563
2011	14,483	17,512

Sources:

1. Manitoba Bureau of Statistics fertility rates for the years 1996 to 2000.
2. Statistics Canada 1996 Census of Canada.

3.1.2.4.1 Projected Aboriginal Population in Thompson

Population projections for the Aboriginal portion of the Thompson population were developed for the years 1996 to 2011. Projections were calculated using the following data:

- **Population:** Aboriginal population of Thompson by age and sex for the year 1996, as presented in the previous sections.
- **Fertility Rates:** Current and projected fertility rates by age of Aboriginal females between the ages of 15 and 44 living in Thompson. Fertility rates were provided for the years 2000 to 2008 by INAC. Rates for the years 1996 to 1999, as well as 2009 to 2011 were projected based on trends observed in the data for 2000 to 2008.
- **Survival Rates:** Current and projected survival rates for the Aboriginal population living on and off reserve in Manitoba between the ages of zero and 85 or greater, categorized by age and sex, for the period 2000 to 2008. Survival rates for the years 1996 to 1999 and 2009 to 2011 were projected based on trends observed in the data for the years 2000 to 2008.
- **Migration Rates:** The Aboriginal population in Thompson tends to be transient so net migration was assumed to be zero. In other words, in-migrants are assumed to equal out-migrants.

Three projection scenarios were developed representing medium, low, and high population growth:

Medium Growth Scenario: The data provided by INAC represented the medium growth rate scenario. A slowly declining fertility rate, and slowly increasing survival rate, are assumed throughout the eleven-year period.

Low Growth Scenario: The low growth scenario was developed assuming a 0.5 per cent faster decline in fertility rates than in the medium growth scenario, and that survival rates remain the same as in the medium growth scenario.

High Growth Scenario: The high growth scenario was developed by assuming fertility and survival rates remain at their 2000 level.

Using the above data, the projected Aboriginal population in Thompson was calculated for the years 2001, 2006 and 2011. Table 3.9 shows that the Aboriginal portion of the total Thompson population is expected to increase from 3,955 in 1996 to between 5,567 and 5,902 in 2011. This represents a projected annual growth rate of 2.3 to 2.7 per cent over the 15-year period.

Table 3.9
Projected Aboriginal Population in Thompson Using
Low, Medium and High Growth Scenarios: 2001, 2006 and 2011

Year	Low Growth Scenario	Medium Growth Scenario	High Growth Scenario
1996 Actual	3,940	3,940	3,940
2001	4,625	4,559	4,559
2006	5,153	5,176	5,201
2011	5,567	5,820	5,902

Sources:

1. Statistics Canada 1996 Census of Canada
2. Indian and Northern Affairs provided fertility rates and survival rates for 2000 to 2008

3.1.3 Economy

3.1.3.1 Employment, Training and Income

Thompson has diversified from its origins as a single industry mining community into a regional government, service and supply centre for much of northern Manitoba and the eastern Arctic. This diversity is evidenced in the economic trends of the community discussed below. Its effects were observed in the population trends discussed in the preceding sections. Economic characteristics for the City of Thompson and its labour force are highlighted in the sections below. Information is provided for the total population, as well as the Aboriginal and NCN populations, where available. Topics addressed include:

- Employment characteristics of Thompson residents
 - The potential labour force
 - The active labour force
 - The projected labour force
 - Employment
 - Unemployment
- Income
 - Personal Income
 - Household Income
 - Family Income
- Education and Training
- Thompson's business sector.

For the most part, information provided is based on Statistics Canada Census data. Where alternative sources are used they are noted. Caution should be used when comparing statistical data for the Aboriginal population across multiple Census years. In 1996 the Census of Canada definition of an Aboriginal person changed to include Registered Indians, those individuals reporting Aboriginal ancestry, those individuals identifying as an Aboriginal person and all Band members. Prior to 1996, and depending on the Census year, the definition of an Aboriginal person included only Registered Indians, those individuals holding Band membership and/or those individuals with Aboriginal ancestry.

3.1.3.1.1 Labour Force Characteristics

[Tables 3.10](#) below highlights the employment and labour force characteristics of the total population of Thompson for the 1996 Census year. The sections that follow [Table 3.10](#) address these characteristics individually for multiple Census years. The information presented in the tables and figures below should be used with caution, as it was derived from only a 20 per cent sample.

Table 3.10
Employment, Participation and Unemployment
in the Thompson Labour Force: 1996

Characteristics ^{1,2}	Total	Male	Female
The potential labour force ³	10,170	5,165	5,010
The active labour force ⁴	8,025	4,470	3,555
• Employed ⁵	7,385	4,115	3,270
• Unemployed ⁶	640	355	280
Persons not in the labour force	2,145	690	1,450
Participation rate	78.9%	86.5%	71.0%
Employment-population ratio	72.6	79.7	65.3
Unemployment rate	8.0%	7.9%	7.9%

Source:

1. Statistics Canada 1996 Census of Canada

Notes:

1. Data incomplete: 20% sample data.
2. Totals may not add due to rounding.
3. Statistics Canada defines the potential labour force as all persons in a given population, excluding institutional residents, age 15 years and over.
4. The active labour force includes all persons 15 years of age and over, excluding institutional residents, who, during the week (Sunday to Saturday) prior to Census Day were either employed or unemployed.
5. The "employed" include all persons who "worked for pay or in self-employment" in the paid labour force in the week prior to enumeration. This includes all persons working for wages or salaries, all self-employed persons (with or without paid help) working in their own business, farm or professional practice, and all persons working without pay on a family farm or business during the reference week. The "employed" also include those persons absent from their job or business for the entire week because of vacation, illness, a labour dispute at their place of work or other reasons.
6. The classification of unemployed does not account for the underemployed, or those individuals working part time but desiring a full time position. As well, the classification does not include discouraged workers: those individuals who wish to work but have ceased looking because they do not believe they will find a job. Unemployment numbers may be understated for these reasons.

Potential Labour Force of Thompson

Potential labour provides an indication of the total number of people of labour force age (age 15 years and over). As highlighted in Table 3.10, the potential labour force of Thompson was calculated in 1996 at 10,170 persons, or 70.7 per cent of the total population. A relatively even distribution was observed between male and female members, with 50.7 per cent of the labour force represented by men and 49.3 per cent represented by women. The male to female ratio of the potential labour force at this time was 1.03:1.

As shown in Figure 3.11 below, a slight increase in the potential labour force was observed between the Census years 1981 and 1996, representing a 0.5 per cent annual growth rate. Between the 1991 and 1996 Census years a slight decrease in the potential labour force occurred, but overall numbers remained higher in 1996 than in 1981. This trend was consistent along gender lines. With the exception of 1991 a consistent movement towards a 1:1 ratio between males and females in the potential labour forces was observed.

The annual growth rates of the potential labour force in the City of Thompson reflect the overall trends in labour force numbers highlighted above (see Table 3.10). Values for the 1981 to 1991 period are positive, reflecting the growth observed in the labour force during that time, whereas values for the 1991 to 1996 period are negative, reflecting the decline in labour force numbers observed during that time.

Table 3.11
Annual Growth Rates of the Potential Labour Force in Thompson: 1981 to 1996

Time Period	Potential Labour Force		
	Overall	Male	Female
1981 to 1986	1.2%	0.7%	1.8%
1986 to 1991	1.1%	1.4%	0.8%
1991 to 1996	-0.9%	-1.5%	-0.2%
Overall 1981 to 1996	0.5%	0.2%	0.8%

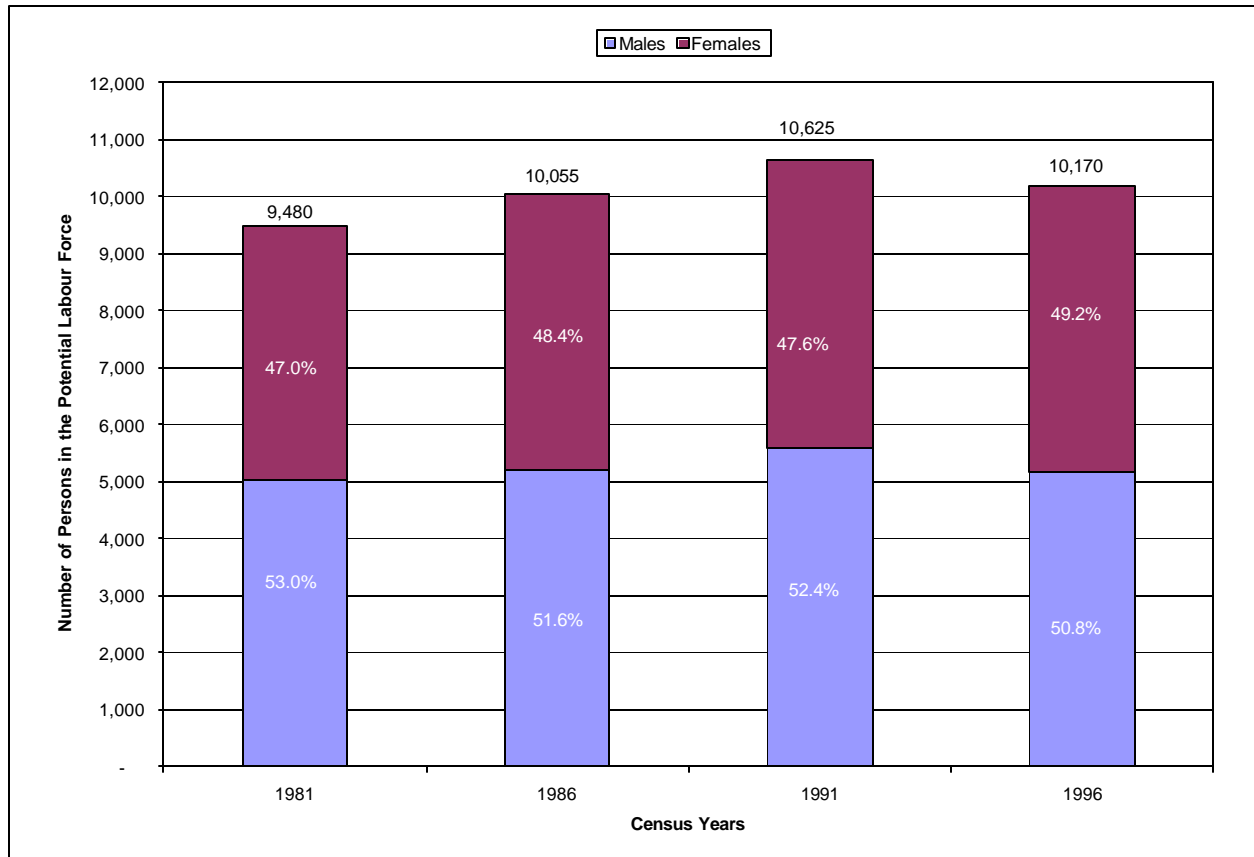
Sources:

1. Statistics Canada 1981 Census of Canada
2. Statistics Canada 1986 Census of Canada
3. Statistics Canada 1991 Census of Canada
4. Statistics Canada 1996 Census of Canada

Note:

1. Incomplete data: 20% sample data.

Figure 3.11
Potential Labour Force for Thompson: 1981, 1986, 1991 and 1996



Source:

1. Statistics Canada 1981, 1986, 1991 and 1996 Census of Canada.

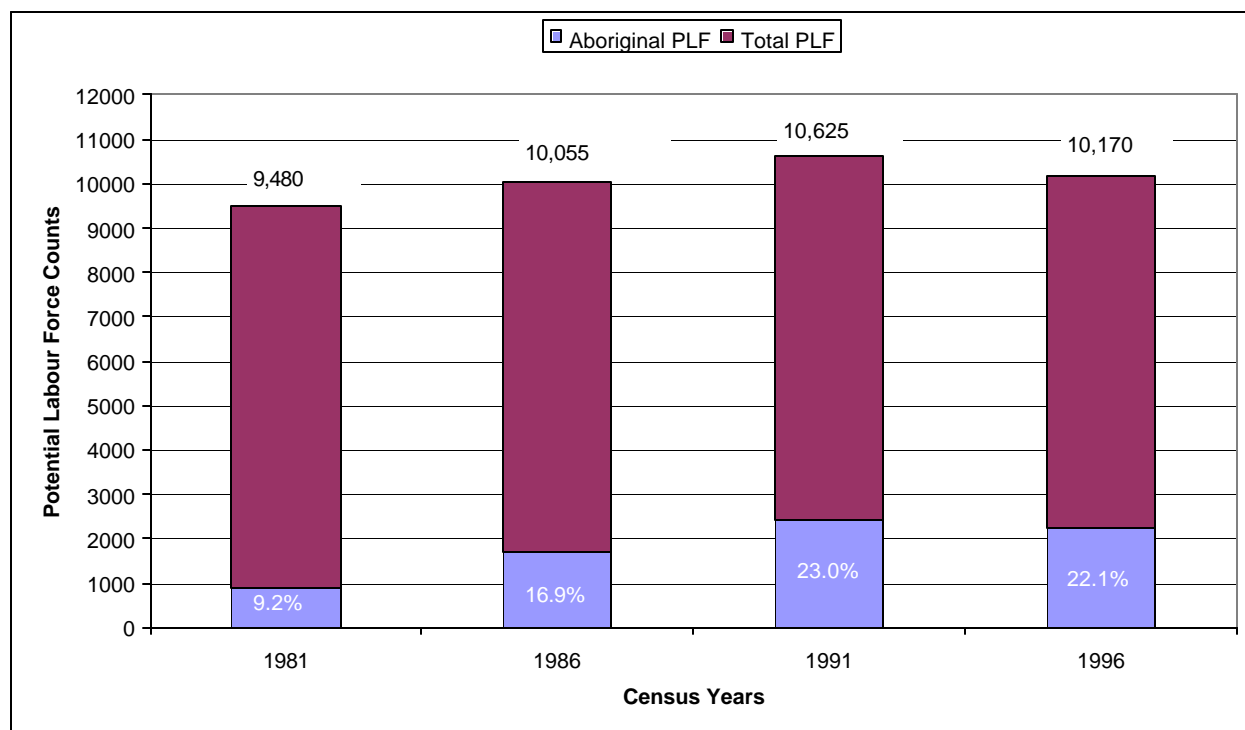
Notes:

1. Incomplete data: 20% sample data.
2. Totals may not add due to rounding.

Potential Aboriginal Labour Force

Overall, the proportion of the potential labour force of Thompson represented by members of the Aboriginal community increased between 1981 and 1996. As [Figure 3.12](#) below demonstrates, the proportion of Aboriginal people in the potential labour force increased between 1981 and 1991, and then decreased slightly between 1991 and 1996.

Figure 3.12
Proportion of Thompson's Potential Labour Force
that was Aboriginal: 1981, 1986, 1991 and 1996



Sources:

1. Statistics Canada 1981 Census of Canada (Statistics collected as of January 1, 1980)
2. Statistics Canada 1986 Census of Canada (Statistics collected as of January 1, 1985)
3. Statistics Canada 1991 Census of Canada (Statistics collected as of January 1, 1990)
4. Statistics Canada 1996 Census of Canada (Statistics collected as of January 15, 1995)
5. Data received from the Department of Indian and Northern Affairs December 18 2001

Notes:

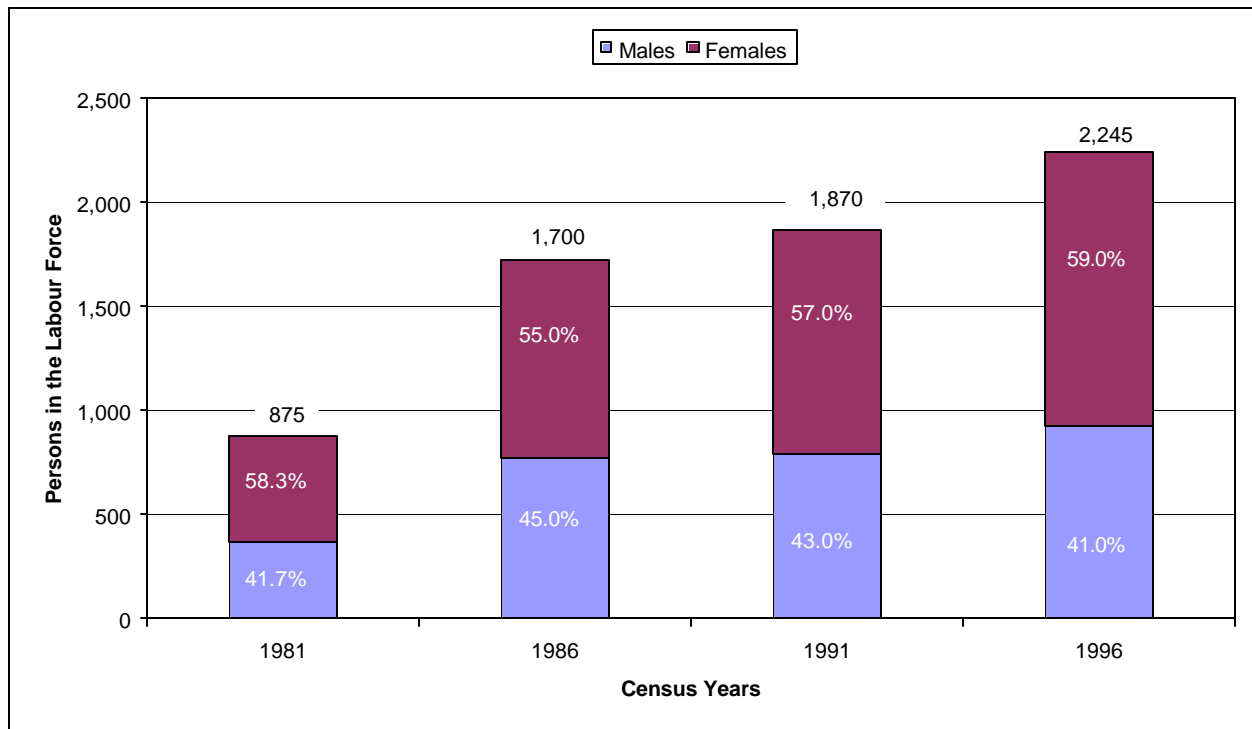
1. The definition of an Aboriginal person in the 1981 Census included Registered Indians and those individuals reporting Aboriginal ancestry. In the 1986 and 1991 Census years, the definition also included those individuals holding Band Membership. The definition of an Aboriginal individual for the 1996 Census includes Registered Indians, those reporting Aboriginal ancestry, those identifying as Aboriginal and all Band Members. In this figure, data from the 1996 Census of Canada has not been adjusted to align with the earlier Canadian Census definition of an Aboriginal person. For this reason, caution should be used when comparing data from the different years.
2. The potential labour force refers to all persons in a given population, excluding institutional residents, age 15 and over. The potential labour force includes members of the population 65 years of age and over.
3. Incomplete data: 20% sample data.
4. Totals may not add due to rounding.

According to the 1996 Census of Canada, the potential Aboriginal labour force was 2,245 people, or 22.1 per cent of the total potential labour force in Thompson and 57.0 per cent of Thompson's total Aboriginal population at that time. Females comprised a greater portion of the potential Aboriginal labour force than males, representing 58.8 per cent of the total. This gender distribution resulted in a 1:1.4 male to female ratio among Aboriginals in the potential labour force.

As [Figure 3.13](#) highlights, a substantial increase in the potential Aboriginal labour force was observed between the census years 1981 and 1996. This increase resulted in a 6.5 per cent annual growth rate over that period. The potential Aboriginal labour force in Thompson increased between 1981 and 1991

from 875 to 2,445 people. This was followed by a slight decrease in numbers between the Census years 1991 and 1996 from 2,445 to 2,245 people. The female portion of the potential Aboriginal labour force fluctuated over these Census years. These fluctuations were reflected in a changing male to female ratio of 1: 1.4 in 1981 to 1:1.2 in 1986, 1:1.35 in 1991 and 1:1.4 in 1996.

Figure 3.13
Trends in the Gender Distribution of the Potential
Aboriginal Labour Force in Thompson: 1981, 1986, 1991 and 1996



Sources:

1. Statistics Canada 1981 Census of Canada (Statistics collected as of January 1, 1980)
2. Statistics Canada 1986 Census of Canada (Statistics collected as of January 1, 1985)
3. Statistics Canada 1991 Census of Canada (Statistics collected as of January 1, 1990)
4. Statistics Canada 1996 Census of Canada (Statistics collected as of January 15, 1995)
5. Data received from the Department of Indian and Northern Affairs December 18 2001

Notes:

1. The definition of an Aboriginal person in the 1981 Census included Registered Indians and those individuals reporting Aboriginal ancestry. In the 1986 and 1991 Census years, the definition also included those individuals holding Band Membership. The definition of an Aboriginal individual for the 1996 Census includes Registered Indians, those reporting Aboriginal ancestry, those identifying as Aboriginal and all Band Members. In this figure, data from the 1996 Census of Canada has not been adjusted to align with the earlier Canadian Census definition of an Aboriginal person. For this reason, caution should be used when comparing data from the different years.
2. The potential labour force refers to all persons in a given population, excluding institutional residents, age 15 and over. The potential labour force includes members of the population 65 years of age and over. Potential labour force numbers may be overstated for this reason, as much of the population retires at, or close to, the age of 65.
3. Incomplete data: 20% sample data.
4. Totals may not add due to rounding.

The potential Aboriginal labour force experienced rates of growth larger than those of the total potential labour force. Also, whereas the total potential labour force of Thompson experienced negative growth for the period 1991 to 1996, the Aboriginal portion of the potential labour force experienced positive growth (see Table 3.12).

Table 3.12
Growth Rates for the Potential Aboriginal Labour Force in Thompson: 1981 to 1996

Time Period	Potential Labour Force		
	Overall	Male	Female
1981 to 1986	14.2%	16.3%	10.6%
1986 to 1991	1.9%	0.5%	2.6%
1991 to 1996	3.7%	3.1%	4.2%
Overall 1981 to 1996	6.5%	6.4%	6.5%

Sources:

1. Statistics Canada 1981, 1986, 1991 and 1996 Census of Canada
2. Data received from the Department of Indian and Northern Affairs December 18, 2001

Notes:

1. The definition of an Aboriginal person in the 1981 Census included Registered Indians and those individuals reporting Aboriginal ancestry. In the 1986 and 1991 Census years, the definition also included those individuals holding Band Membership. The definition of an Aboriginal individual for the 1996 Census includes Registered Indians, those reporting Aboriginal ancestry, those identifying as Aboriginal and all Band Members. In this figure, data from the 1996 Census of Canada has not been adjusted to align with the earlier Canadian Census definition of an Aboriginal person. For this reason, caution should be used when comparing data from the different years.
2. Data incomplete: 20% sample data.
3. Totals may not add due to rounding.

Active Labour Force in Thompson

As shown in Table 3.13, the active labour force, defined as those individuals either employed or unemployed, was calculated in the 1996 Census at 8,025 persons. The active labour force at that time represented 79.0 per cent of the potential Thompson labour force. There were fewer females than males in the active labour force, resulting in a 1.3:1 male to female relationship. At the time of the 1996 Census the participation rate was calculated at 78.9 per cent, which remained higher than the provincial rate of 66.3 per cent.

Statistics demonstrate that there was a slight increase in the active labour force in the City of Thompson between the Census years 1981 and 1996 (see Table 3.13). Between the 1991 and 1996 census years a slight decrease was observed, but overall numbers remained higher in 1996 than in 1981. This trend was consistent along gender lines (see Figure 3.14).

Participation rates in Thompson have historically been higher than the provincial rates, as a result of employment opportunities in the mining sector and the fact that people moved when they did not have work or work ended. Participation rates in Thompson deviated from the provincial norm to the greatest extent in the 1960s, the early days of INCO's activity in the community. Rates have moved closer to the provincial average over time, reflecting a shift away from a single-industry mining centre towards a more diversified economy (Taunton 1978). As shown in Table 3.13, participation rates remained fairly stable over the Census years 1981 to 1996.

Table 3.13
Thompson's Active Labour Force and Participation Rates: 1981, 1986, 1991 and 1996

Characteristics	1981	1986	1991	1996
Active labour force ¹	7,295	7,740	8,300	8,025
Persons not in the labour force	2,195	2,315	2,325	2,145
Participation rate	77.0%	76.9%	78.2%	78.9%

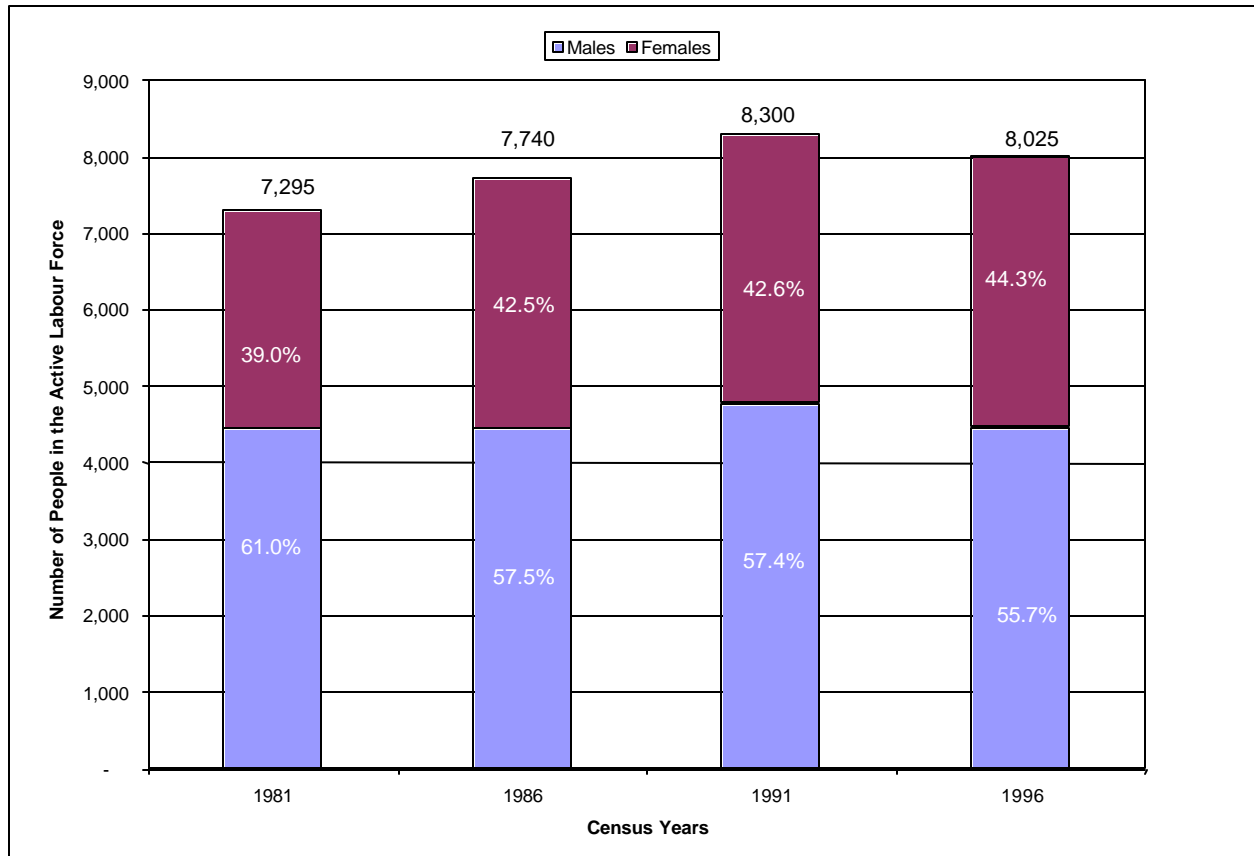
Sources:

1. Statistics Canada 1981 Census of Canada (Statistics collected as of January 1, 1980)
2. Statistics Canada 1986 Census of Canada (Statistics collected as of January 1, 1985)
3. Statistics Canada 1991 Census of Canada (Statistics collected as of January 1, 1990)
4. Statistics Canada 1996 Census of Canada (Statistics collected as of January 15, 1995)

Notes:

1. The active labour force includes all persons 15 years of age and over, excluding institutional residents, who, during the week (Sunday to Saturday) prior to Census Day were either employed or unemployed.
2. The "employed" include all persons who "worked for pay or in self-employment" in the paid labour force in the week prior to
3. Data incomplete: 20% sample data.
4. Totals may not add due to rounding.

Figure 3.14
Gender Distribution of the Active Labour Force in Thompson: 1981, 1986, 1991 and 1996



Source:

1. Statistics Canada 1981, 1986, 1991 and 1996 Census of Canada.

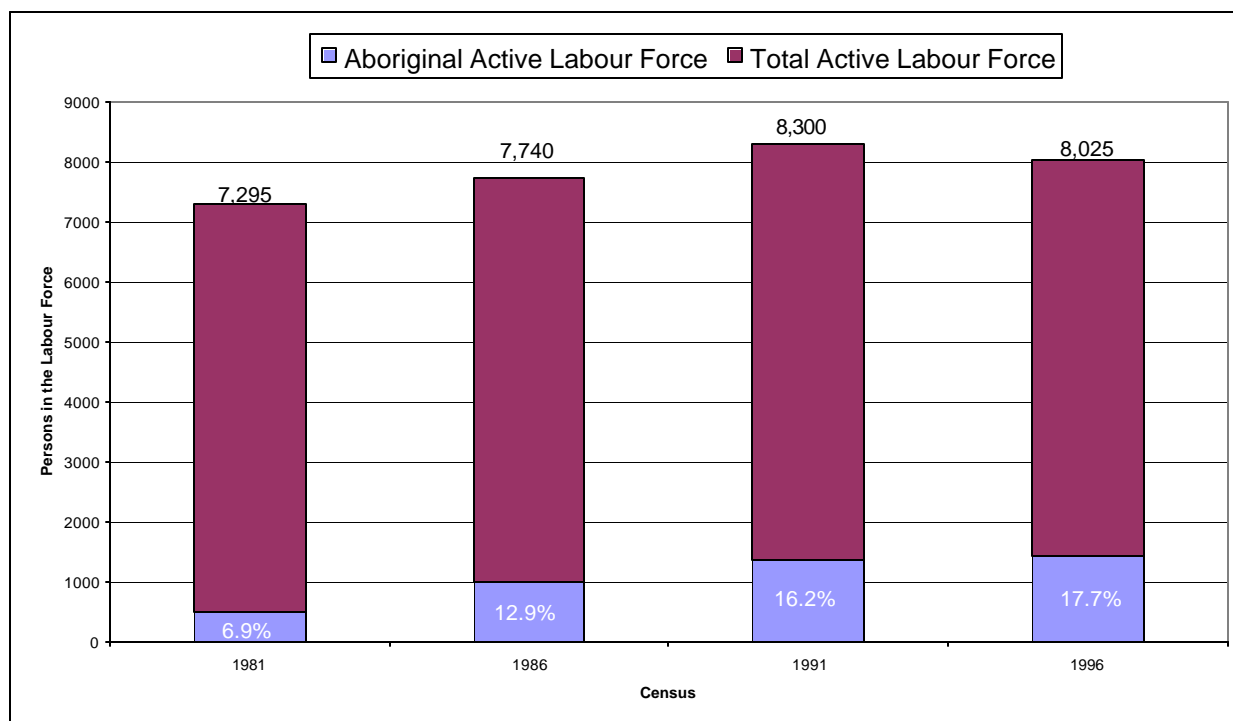
Notes:

1. Incomplete data: 20% sample data.
2. Totals may not add due to rounding.

The Active Aboriginal Labour Force

Figure 3.15 below highlights the portion of Thompson's active labour force that is of Aboriginal ancestry. Similar to the potential labour force in Thompson, the portion of the active Thompson labour force that is Aboriginal increased between 1981, 1986, 1991 and 1996. It should be noted, however, that the Aboriginal portion of the active labour force was smaller than that of the total potential labour force in Thompson.

Figure 3.15
Proportion of Thompson's Active Labour Force
that was Aboriginal: 1981, 1986, 1991 and 1996



Sources:

1. Statistics Canada 1981 Census of Canada (Statistics collected as of January 1, 1980)
2. Statistics Canada 1986 Census of Canada (Statistics collected as of January 1, 1985)
3. Statistics Canada 1991 Census of Canada (Statistics collected as of January 1, 1990)
3. Statistics Canada 1996 Census of Canada (Statistics collected as of January 15, 1995)
4. Data received from the Department of Indian and Northern Affairs December 18 2001

Notes:

1. The definition of an Aboriginal person in the 1981 Census included Registered Indians and those individuals reporting Aboriginal ancestry. In the 1986 and 1991 Census years, the definition also included those individuals holding Band Membership. The definition of an Aboriginal individual for the 1996 Census includes Registered Indians, those reporting Aboriginal ancestry, those identifying as Aboriginal and all Band Members. In this figure, data from the 1996 Census of Canada has not been adjusted to align with the earlier Canadian Census definition of an Aboriginal person. For this reason, caution should be used when comparing data from the different years.
2. The active labour force includes all persons 15 years of age and over, excluding institutional residents, who, during the week (Sunday to Saturday) prior to Census Day were either employed or unemployed.
3. Incomplete data: 20% sample data.
4. Totals may not add due to rounding.

As shown in [Table 3.14](#) below, the active Aboriginal labour force was calculated at the time of the 1996 Census at 1,420 persons, which was 17.7 per cent of Thompson's total active labour force. The active Aboriginal labour force was divided almost evenly between males and females.

The participation rate of the potential Aboriginal labour force at the time of the 1996 Census was 63.3 per cent, which was lower than both the Thompson (78.9%) and provincial rates (66.3%). The participation rate for Aboriginal men was calculated at 76.2 per cent and for Aboriginal women at 53.8 per cent.

Table 3.14
Active Aboriginal Labour Force and Aboriginal Participation Rates
in Thompson: 1981, 1986, 1991 and 1996

Characteristics ^{1,2,3}	1981	1986	1991	1996
The active labour force ⁴	500	995	1,345	1,420
Persons not in the labour force	375	710	525	830
Participation rate	57.1%	58.5%	55.0%	63.3%
Unemployment rate	16.0%	28.6%	19.0%	19.4%

Sources:

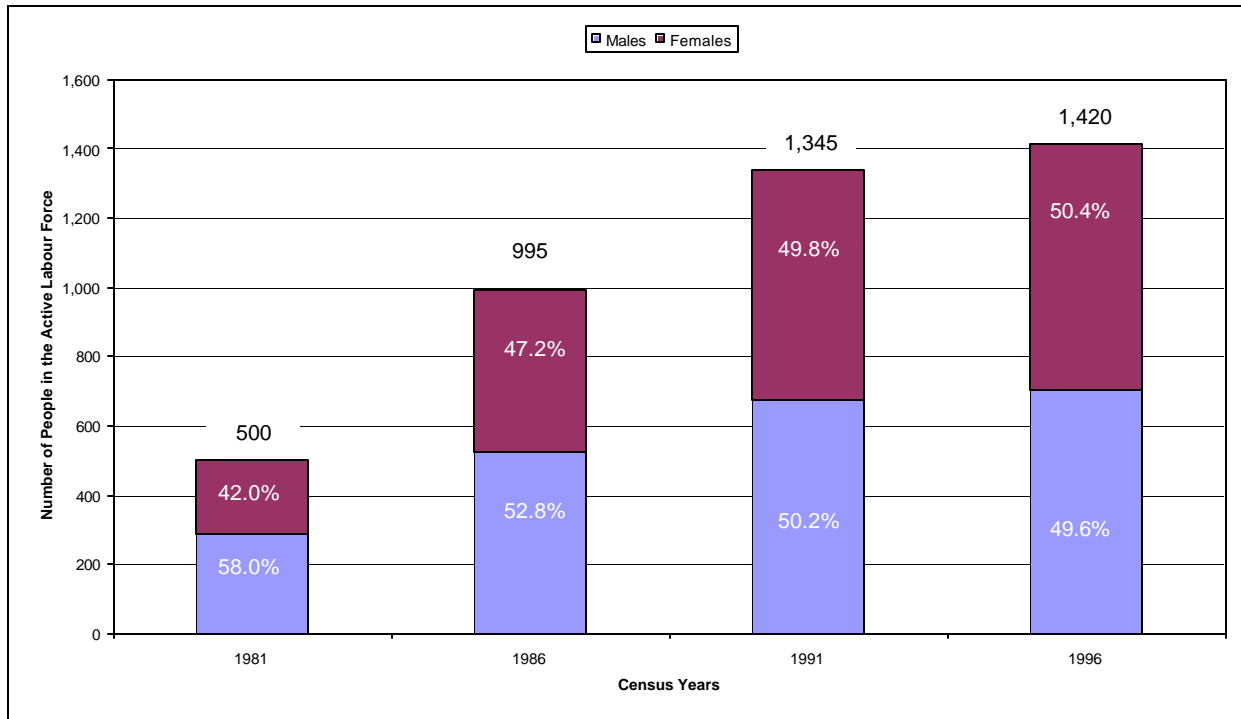
1. Statistics Canada 1986 Census of Canada (Statistics collected as of January 1, 1985)
2. Statistics Canada 1991 Census of Canada (Statistics collected as of January 1, 1990)
3. Statistics Canada 1996 Census of Canada (Statistics collected as of January 15 1995)
4. Data received from the Department of Indian and Northern Affairs December 18th, 2001

Notes:

1. Data incomplete: 20% sample data.
2. Totals may not add due to rounding.
3. The definition of an Aboriginal person in the 1981 Census included Registered Indians and those individuals reporting Aboriginal ancestry. In the 1986 and 1991 Census years, the definition also included those individuals holding Band Membership. The definition of an Aboriginal individual for the 1996 Census includes Registered Indians, those reporting Aboriginal ancestry, those identifying as Aboriginal and all Band Members. In this figure, data from the 1996 Census of Canada has not been adjusted to align with the earlier Canadian Census definition of an Aboriginal person. For this reason, caution should be used when comparing data from the different years.
4. The active labour force includes all persons 15 years of age and over, excluding institutional residents, who, during the week (Sunday to Saturday) prior to Census Day were either employed or unemployed. The total number of persons in the labour force includes persons over the age of sixty-five.

As shown in [Figure 3.16](#), the active Aboriginal labour force consistently increased between the Census years 1981, 1986, 1991 and 1996. Total numbers grew from 500 in 1981 to 1,420 in 1996. Although both the potential and active Aboriginal labour force grew between the 1981 and 1991 Census, overall participation rates declined from 57.1 per cent in 1981 to 55.0 per cent in 1991. Participation rates increased from 55.0 per cent in 1991 to 63.3 per cent in 1996.

Figure 3.16
Trends in the Gender Distribution of the
Active Aboriginal Labour Force in Thompson: 1981, 1986, 1991 and 1996



Sources:

1. Statistics Canada 1981 Census of Canada (Statistics collected as of January 1, 1980)
2. Statistics Canada 1986 Census of Canada (Statistics collected as of January 1, 1985)
3. Statistics Canada 1991 Census of Canada (Statistics collected as of January 1, 1990)
4. Statistics Canada 1996 Census of Canada (Statistics collected as of January 15, 1995)
5. Data received from the Department of Indian and Northern Affairs December 18 2001

Notes:

1. The definition of an Aboriginal person for the 1981, 1986 and 1991 Census years includes only Registered Indians and/or those individuals reporting Aboriginal ancestry. The definition of an Aboriginal individual for the 1996 Census includes Registered Indians, those reporting Aboriginal ancestry, those identifying as Aboriginal and all Band Members. In this figure, data from the 1996 Census of Canada has not been adjusted to align with the earlier Canadian Census definition of an Aboriginal person. For this reason, caution should be used when comparing data from the different years.
2. The active labour force includes all persons 15 years of age and over, excluding institutional residents, who, during the week (Sunday to Saturday) prior to Census Day were either employed or unemployed.
3. Incomplete data: 20% sample data.
4. Totals may not add due to rounding.

Projected Labour Force

The projected future labour force for the City of Thompson can be determined using the population projections presented in section 3.1.2.4. Using these projections, the projected potential Thompson labour force (those aged 15 and above) under a low and high growth scenarios are presented in Table 3.15 below. The potential Thompson labour force is shown for the years 2001, 2006 and 2011. Based on this data, the projected potential Thompson labour force is between 10,239 and 14,042 people. This represents an annual growth rate of .04 and 2.8 per cent.

Table 3.15

**Projected Potential Labour Force of Thompson
Using Low and High Growth Rate Scenarios: 2001, 2006, 2011**

Year	Low Growth Scenario	High Growth Scenario
1996 Actual	10,170	10,170
2001	10,193	11,382
2006	10,216	13,386
2011	10,239	14,042

Sources:

1. Statistics Canada 1996 Census of Canada.
2. Projections compiled using Manitoba Bureau of statistics data for fertility and survival rates.

The projected active labour force can be calculated using Statistics Canada data for the Census years 1981 to 1996 and the projected potential labour force for 2001, 2006 and 2011. Statistics Canada data for 1981 to 1986 indicate that for every 9 members added to the potential labour force, approximately 7 of these became active. Assuming this ratio remains the same, the active labour force for the years 2001, 2006 and 2011 can be estimated by determining the number of new members added to the potential labour force each year, and by extrapolating the number that would become part of the active labour force.

Table 3.16 below shows the projected active labour force in the City of Thompson for the years 2001, 2006 and 2011 using the methodology cited above. The table indicates that the active labour force in Thompson would increase from 8,025 people in 1996 to between 7,876 and 10,801 in 2011. This would mean that the projected participation rate among individuals in Thompson would be approximately 77 per cent.

Table 3.16
Projected Active Labour Force of Thompson Using
Low and High Growth Rate Scenarios: 2001, 2006, 2011

Year	Low Growth Scenario	High Growth Scenario
1996 Actual	8,025	8,025
2001	7,841	8,755
2006	7,858	10,230
2011	7,876	10,801

Projected Aboriginal Labour Force

The projected potential labour force for the Thompson Aboriginal population can be determined using the population projections presented in section 3.1.2.4.1. Using these projections, the projected potential Thompson Aboriginal labour force (those aged 15 and above) under a low, medium and high growth scenario are presented in Table 3.17 below. The potential Thompson Aboriginal labour force is shown for the years 2001, 2006 and 2011. Based on the data, the projected potential Thompson Aboriginal labour force is between 3,869 and 3,865. This represents an annual growth rate in the potential Aboriginal labour force of approximately 3.7 per cent between the years 1996 and 2011.

Table 3.17
Projected Thompson Aboriginal Potential Labour Force Using
Low, Medium and High Growth Rate Scenarios: 2001, 2006, 2011

Year	Low Growth Scenario	Medium Growth Scenario	High Growth Scenario
1996 Actual	2,245	2,245	2,245
2001	2,759	2,759	2,759
2006	3,313	3,305	3,311
2011	3,869	3,869	3,865

Sources:

1. INAC population data for 2000.
2. INAC, 2001 projected fertility rates, survival rates and status inheritance rates for off-reserve First Nation populations in Manitoba for 2001 to 2008. Similar rates were estimated for 2009 to 2011 based on trends seen in the 2000 to 2008 period.

The projected active Aboriginal labour force in Thompson can be determined using the same methodology used to project the active labour force for the entire Thompson population. Statistics Canada data for the period 1981 to 1996 show that for every 8 people in the potential Aboriginal labour force, approximately 5 become active. Assuming this ratio remains constant, the active Aboriginal labour force in Thompson is projected under a low, medium and high growth rate scenario in [Table 3.18](#) below for the years 2001, 2006 and 2011.

As can be seen in Table 3.18 below, the active Aboriginal labour force is projected to increase from 1,420 in 1996 to between 2,415 and 2,418 in 2011. This would mean that in 2011, the projected participation rate among the Aboriginal portion of the active labour force in Thompson is approximately 62 per cent.

Table 3.18
Projected Thompson Aboriginal Active Labour Force Using
Low, Medium and High Growth Rate Scenarios: 2001, 2006, 2011

Year	Low Growth Scenario	Medium Growth Scenario	High Growth Scenario
1996 Actual	1,420	1,420	1,420
2001	1,724	1,724	1,724
2006	2,070	2,065	2,069
2011	2,418	2,418	2,415

Employment

Overall Employment Rate

According to the 1996 Census of Canada, 7,385 (4,115 males and 3,270 females) of the 8,025 people (92.0%) in Thompson's active labour force were employed. As can be seen in [Table 3.19](#), the number of employed persons in Thompson increased between 1981 and 1986, as well as between 1986 and 1991. The number of employed persons decreased between 1991 and 1996, but overall numbers remained higher than they were in 1981.

Table 3.19
Employment Rate of the Thompson
Labour Force: 1981, 1986, 1991 and 1996

Year	Total	Male	Female
1981	94.8%	96.5%	92.1%
1986	90.9%	91.6%	90.0%
1991	91.7%	93.1%	89.8%
1996	92.0%	92.1%	92.0%
1996 Manitoba Employment Rate	92.1%	91.5%	92.9%

Sources:

1. Statistics Canada 1981 Census of Canada (Statistics collected as of January 1, 1980)
2. Statistics Canada 1986 Census of Canada (Statistics collected as of January 1, 1985)
3. Statistics Canada 1991 Census of Canada (Statistics collected as of January 1, 1990)
4. Statistics Canada 1996 Census of Canada (Statistics collected as of January 15, 1995)

Notes:

1. The "employed" include all persons who "worked for pay or in self-employment" in the paid labour force in the week prior to enumeration. This includes all persons working for wages or salaries, all self-employed persons (with or without paid help) working in their own business, farm or professional practice, and all persons working without pay on a family farm or business during the reference week. The "employed" also include those persons absent from their job or business for the entire week because of vacation, illness, a labour dispute at their place of work or other reasons.
2. The classification of unemployed does not account for the underemployed, or those individuals working part time but desiring a full time position. As well, the classification does not include discouraged workers: those individuals who wish to work but have ceased looking because they do not believe they will find a job. Unemployment numbers may be understated for these reasons.
3. Data incomplete: 20% sample data.
4. Totals may not add due to rounding.

Table 3.20 below highlights the distribution of workers who are employed full and part-time.

Table 3.20
Distribution of Full and Part-Time Workers in Thompson
for the Census Years 1986, 1991 and 1996

Characteristics	1986		1991		1996	
	Male	Female	Male	Female	Male	Female
Full time status¹	2,735 (63.4%)	1,260 (39.0%)	3,085 (64.9%)	1,660 (46.6%)	2,915 (66.0%)	1,660 (47.5%)
Part time status²	1,580 (36.6%)	1,970 (61.0%)	1,670 (35.1%)	1,905 (53.4%)	1,500 (34.0%)	1,835 (52.5%)
Total employed persons	4,315	3,230	4,755	3,565	4,415	3,495

Sources:

1. Statistics Canada 1986 Census of Canada
2. Statistics Canada 1991 Census of Canada
3. Statistics Canada 1996 Census of Canada

Notes:

1. Full-time status is given to respondents working full-time hours for the full year prior to the Canadian Census. Full-time work consists of a 30 or more hour workweek.
2. Part-time status is given to respondents working part-time or for only part of the year prior to the Canadian Census. Those individuals holding both full and part-time positions in the year prior to the national census were classified based on the job at which they worked the most weeks.
3. Incomplete data: 20% sample data.
4. Totals may not add due to rounding.

Employment Rate of Thompson's Aboriginal Population

According to the 1996 Census of Canada 1,145 (560 males and 580 females) of the 1,420 persons (80.6%) in the active Aboriginal labour force were employed. [Table 3.21](#) demonstrates that the overall number of persons employed in the active Aboriginal labour force increased substantially between 1986 and 1991 and slightly between 1991 and 1996.

Table 3.21
Employment Rates of the Aboriginal Labour Force
in Thompson: 1981, 1986, 1991 and 1996

Year	Total	Male	Female
1981	83.0%	87.9%	76.2%
1986	71.4%	66.7%	76.6%
1991	81.0%	83.0%	79.7%
1996	80.6%	79.4%	81.7%
1996 Manitoba Employment Rate	92.1%	91.5%	92.9%

Sources:

1. Statistics Canada 1981 Census of Canada (Statistics collected as of January 1, 1980)
2. Statistics Canada 1986 Census of Canada (Statistics collected as of January 1, 1985)
3. Statistics Canada 1991 Census of Canada (Statistics collected as of January 1, 1990)
4. Statistics Canada 1996 Census of Canada (Statistics collected as of January 15 1995)
5. Data received from the Department of Indian and Northern Affairs December 18 2001

Notes:

1. The definition of an Aboriginal person in the 1981 Census included Registered Indians and those individuals reporting Aboriginal ancestry. In the 1986 and 1991 Census years, the definition also included those individuals holding Band Membership. The definition of an Aboriginal individual for the 1996 Census includes Registered Indians, those reporting Aboriginal ancestry, those identifying as Aboriginal and all Band Members. In this figure, data from the 1996 Census of Canada has not been adjusted to align with the earlier Canadian Census definition of an Aboriginal person. For this reason, caution should be used when comparing data from the different years.
2. The "Employed" include all persons who "worked for pay or in self-employment" in the paid labour force in the week prior to enumeration. This includes all persons working for wages or salaries, all self-employed persons (with or without paid help) working in their own business, farm or professional practice, and all persons working without pay on a family farm or business during the reference week. The "Employed" also include those persons absent from their job or business for the entire week because of vacation, illness, a labour dispute at their place of work or other reasons.
3. The classification of Unemployed does not account for those individuals working part time but desiring a full time position. As well, the classification does not include discouraged workers, or those individuals who wish to work but have ceased looking because they do not believe they will find a job. Unemployment numbers may be understated for these reasons.
4. Data incomplete: 20% sample data.
5. Totals may not add due to rounding.

Employment by Sector in Thompson

Diversification in the Thompson economy is demonstrated in [Table 3.22](#) below, which outlines the distribution of Thompson workers into various economic sectors. As can be seen in [Table 3.22](#), approximately two-thirds of employed people in Thompson worked in the service sector as of the 1996 Census of Canada. At that time, the three leading occupational sectors included: Mining, the Retail and Trade Sector and Health and Social Services.

Table 3.22
Employment Statistics by Industry Division in Thompson: 1996

Industry Division	1996 (Total = 7,815)
Fishing and trapping industries	0.1%
Logging and forestry industries	0.6%
Mining (including milling), quarrying and oil well industries	20.0%
Manufacturing industries	4.8%
Construction industries	4.1%
Transportation and storage industries	3.7%
Communication and other utility industries	6.8%
Wholesale trade industries	2.6%
Retail trade industries	11.4%
Finance and insurance industries	2.6%
Real estate operator and insurance agent industries	1.3%
Business service industries	2.2%
Government service industries	6.3%
Educational service industries	7.5%
Health and social services industries	10.9%
Accommodation, food and beverage service industries	8.5%
Other service industries	6.4%

Source:

1. Statistics Canada 1996 Census of Canada

Notes:

1. Incomplete data: 20% sample data
2. Totals may not add due to rounding

Diversification in the Thompson economy is further demonstrated in [Table 3.23](#) below, which outlines Thompson's major employers as of December, 2000. As can be seen in the table, INCO was the single largest employer: the Provincial Government, the Mystery Lake School Division and the Burntwood Regional Health Authority also employed a substantial proportion of Thompson's employed residents (Mystery Net Project 2001).

Table 3.23
Thompson's Major Employers, the Industry or Service Provided,
and the Number of Employees as of January 8, 1999

Employer	Services	Number of Employees
INCO	Mining, smelting, refining	1,400
Provincial Government	Government services	1,200
Burntwood Regional Health Authority	Health Service	420
Mystery Lake School Division	School services	400
Calm Air	Aircraft / travel services	300
Skyward Aviation	Aircraft / travel services	205
Wal-Mart	Retail	150
City of Thompson	Municipal services	120
Manitoba Hydro	Hydro	112
Safeway	Retail	105
Manitoba Telecom Services	Telephone services	80

Source:

1. North Central Development Corporation, 2001

Note:

1. The data in the table above were collected through a North Central Development telephone survey conducted in December, 2001. The employment counts should be read as rounded approximations.

Aboriginal Employment By Sector

Table 3.24 below highlights the distribution of Aboriginal workers in Thompson within the different economic sectors. As can be seen in the table, at the time of the 1996 Census of Canada the largest employer of Aboriginal residents in Thompson was public administration at 31.1 per cent.

Table 3.24
Aboriginal Employment by Industry Division in Thompson: 1996

Industry Division	1996 (Total = 1,480)
Agriculture	-
Fishing and trapping industries	-
Logging and forestry industries	1.7%
Mining (including milling), quarrying and oil well industries	10.8%
Manufacturing industries	0.7%
Construction industries	4.1%
Transportation, communication and other utilities	10.8%
Trade	12.2%
Finance, insurance and real estate	3.4%
Community, business and personal services	10.1%
Public administration and defense	31.1%
Accommodation, food and beverage service industries	15.5%

Sources:

1. Statistics Canada 1996 Census of Canada (Statistics collected as of January 15 1995).
2. Data received from the Department of Indian and Northern Affairs February 7, 2002.

Notes:

1. The definition of an Aboriginal person in the 1981 Census included Registered Indians and those individuals reporting Aboriginal ancestry. In the 1986 and 1991 Census years, the definition also included those individuals holding Band Membership. The definition of an Aboriginal individual for the 1996 Census includes Registered Indians, those reporting Aboriginal ancestry, those identifying as Aboriginal and all Band Members. In this figure, data from the 1996 Census of Canada has not been adjusted to align with the earlier Canadian Census definition of an Aboriginal person. For this reason, caution should be used when comparing data from the different years.
2. Data incomplete: 20% sample data.
3. Totals may not add due to rounding.

Unemployment

According to the 1996 Census of Canada, the unemployment rate in the City of Thompson was 8.0 per cent. This was slightly higher than the provincial rate of 7.9 per cent. Unlike participation rates, the unemployment rate was similar for both genders. As can be seen in [Table 3.25](#), unemployment rates fluctuated between 1981 and 1996. Rates increased between 1981 and 1986, but decreased between 1986, 1991 and 1996.

Table 3.25
Unemployment Rates of Thompson's Labour Force: 1981, 1986, 1991 and 1996

Characteristics	1981	1986	1991	1996
Thompson unemployment rate	5.1%	8.5%	8.3%	8.0%
Manitoba unemployment rate	N/A	10.3%	10.2%	7.9%

Sources:

1. Statistics Canada 1986 Census of Canada (Statistics collected as of January 1, 1985).
2. Statistics Canada 1991 Census of Canada (Statistics collected as of January 1, 1990)
3. Statistics Canada 1996 Census of Canada (Statistics collected as of January 15 1995)

Notes:

1. The classification of unemployed does not account for those individuals working part time but desiring a full time position. As well, the classification does not include discouraged workers, or those individuals who wish to work but have ceased looking because they do not believe they will find a job. Unemployment numbers may be understated for these reasons.
2. Data incomplete: 20% sample data.
3. Totals may not add due to rounding.

Unemployment Among Thompson's Aboriginal Population

The unemployment rate among Thompson's Aboriginal population was 19.4 per cent at the time of the 1996 Census. This rate was more than twice as high as Thompson's rate of 8.0 per cent and the provincial rate of 7.9 per cent. The unemployment rate was 19.9 per cent for the male proportion of the active Aboriginal labour force and 19.0 per cent for the female proportion of the active Aboriginal labour force.

Between the Census years 1986 and 1991, unemployment rates for the active Aboriginal labour force declined from 28.6 per cent to 19.0 per cent. These rates rose to 19.4 per cent by the time of the 1996 Census (see [Table 3.26](#)).

Table 3.26
Unemployment Rates Among Thompson's Active Aboriginal¹ Labour Force as Compared to Thompson as a Whole, Northern Manitoba and Manitoba: 1981, 1986, 1991 and 1996

Characteristics	1981	1986	1991	1996
Aboriginal unemployment rate	16.0%	28.6%	19.0%	19.4%
Thompson's unemployment rate	5.1%	9.1%	8.3%	8.0%
Northern Manitoba unemployment rate	N/A	N/A	N/A	16.5%
Manitoba unemployment rate	N/A	10.3%	10.2%	7.9%

Sources:

1. Statistics Canada 1981 Census of Canada (Statistics collected as of January 1, 1985)
2. Statistics Canada 1986 Census of Canada (Statistics collected as of January 1, 1985)
3. Statistics Canada 1991 Census of Canada (Statistics collected as of January 1, 1990)
4. Statistics Canada 1996 Census of Canada (Statistics collected as of January 15, 1995)
5. Data received from the Department of Indian and Northern Affairs December 18, 2001.

Notes:

1. The definition of an Aboriginal person for the 1986 and 1991 Census years includes only Registered Indians and/or those individuals reporting Aboriginal ancestry. The definition of an Aboriginal individual for the 1996 Census includes Registered Indians, those reporting Aboriginal ancestry, those identifying as Aboriginal and all Band Members. In this figure, data from the 1996 Census of Canada has not been adjusted to align with the earlier Canadian Census definition of an Aboriginal person. For this reason, caution should be used when comparing data from the different years.
2. The classification of Unemployed does not account for those individuals working part time but desiring a full time position. As well, the classification does not include discouraged workers, or those individuals who wish to work but have ceased looking because they do not believe they will find a job. Unemployment numbers may be understated for these reasons.
3. Data incomplete: 20% sample data.
4. Totals may not add due to rounding.

3.1.3.1.2 Income Levels and Sources

Personal Income

Table 3.27 indicates that, according to the 1996 Census of Canada, the average personal income in Thompson was \$31,257. This was higher than the Manitoba average personal income of \$22,667 in 1996. Figure 3.17 indicates that Thompson males typically made twice as much as females in the Census years 1981, 1986, 1991 and 1996. (Note that the values shown in Figure 3.17 are not adjusted for inflation.)

Table 3.27
Average Personal Income and Distribution of Income by Gender in Thompson: 1996

Personal Income \$\$	Number of Income Earning Individuals (Total = 9,380)	Percentage of Total Income Earning Individuals
Under \$10,000	2,370	25.3%
\$10,000 - \$19,999	1,530	16.3%
\$20,000 - \$29,999	1,255	13.4%
\$30,000 - \$39,999	1,030	11.0%
\$40,000 - \$49,999	8,60	9.2%
\$50,000 - \$59,999	920	9.8%
\$60,000 and over	1,415	15.1%
Average Personal Income:		
Thompson	\$31,257	
Manitoba	\$22,667	

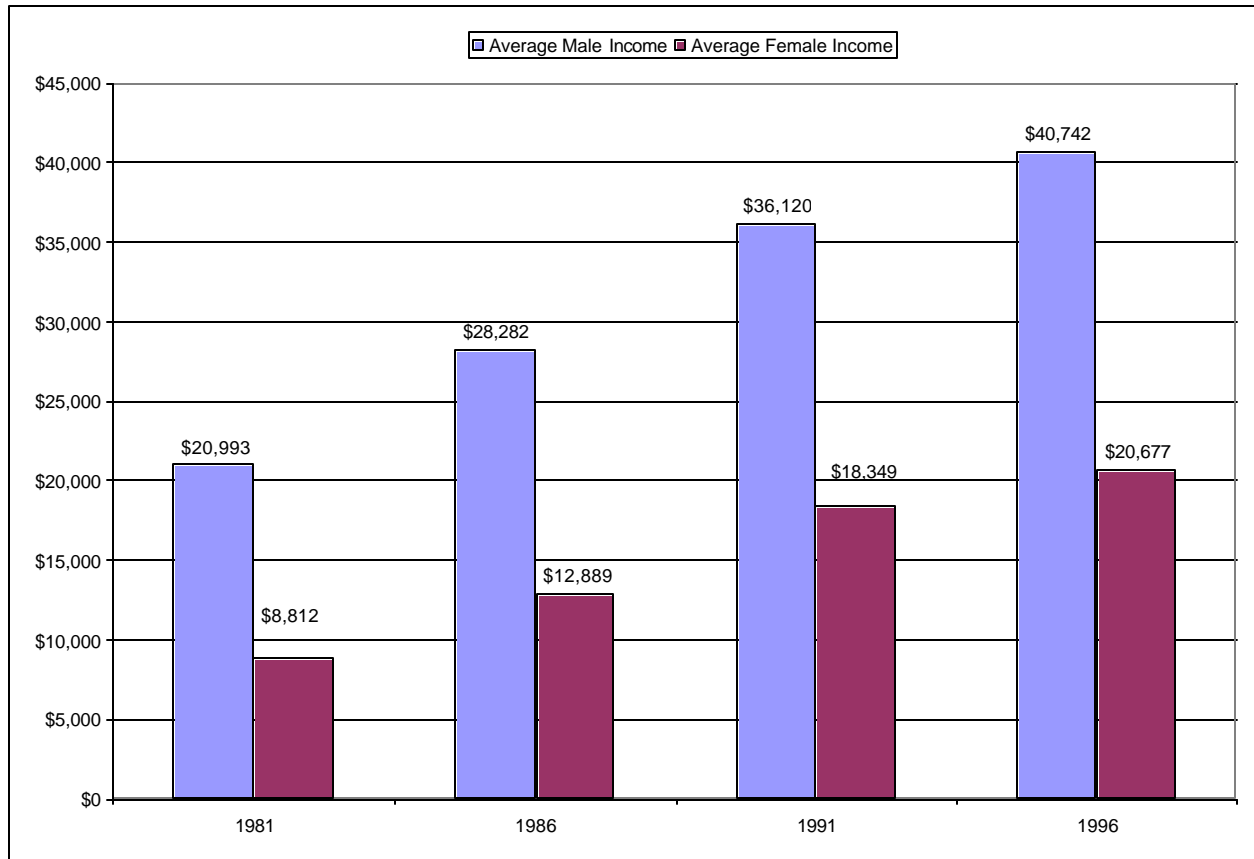
Source:

1. Statistics Canada 1996 Census of Canada

Notes:

1. Incomplete data: 20% sample data
2. Totals may not add due to rounding.

Figure 3.17
Average Personal Income by Gender in Thompson: 1981, 1986, 1991 and 1996



Source:

1. Statistics Canada 1981, 1986, 1991 and 1996 Census of Canada

Notes:

1. Incomplete data: 20% sample data.
2. Totals may not add due to rounding.
3. Incomes cited are not adjusted for inflation.

Aboriginal Personal Income

Table 3.28 below highlights the distribution of income among Thompson's Aboriginal population. As can be seen in the table, the average personal income of Aboriginal residents of Thompson at the time of the 1996 Census of Canada was \$19,963. This figure constituted roughly two thirds of the Thompson average, but was similar to the provincial average.

Table 3.28
Personal Income Levels of Thompson's Aboriginal Population: 1996

Personal Income	Number of Income Earning Individuals (Total 1,960 with income)	Percentage of Total Income Earning Individuals
Under \$10,000	775	39.5%
\$10,000 - \$19,999	445	22.7%
\$ 20,000 - \$ 29,999	205	10.5%
\$ 30,000 - \$ 39,999	165	8.4%
\$ 40,000 - \$ 49,999	155	7.9%
\$ 50,000 - \$ 59,999	130	6.6%
\$ 60,000 and over	85	4.3%
Average Personal Income:		
Thompson Aboriginal Average	\$19,963	
Thompson Average	\$31,257	
Manitoba	\$22,667	

Source:

1. Statistics Canada 1996 Census of Canada.

Notes:

1. The definition of an Aboriginal person in the 1981 Census included Registered Indians and those individuals reporting Aboriginal ancestry. In the 1986 and 1991 Census years, the definition also included those individuals holding Band Membership. The definition of an Aboriginal individual for the 1996 Census includes Registered Indians, those reporting Aboriginal ancestry, those identifying as Aboriginal and all Band Members. In this figure, data from the 1996 Census of Canada has not been adjusted to align with the earlier Canadian Census definition of an Aboriginal person. For this reason, caution should be used when comparing data from the different years.
2. Incomplete data: 20 % sample data.
3. Totals may not add due to rounding.

Family Income

Table 3.29 below indicates that average family income in Thompson at the time of the 1996 Census of Canada was \$62,918. This was significantly higher than the provincial average for that year of \$50,236.

Table 3.29
Average Family Income and Distribution of Income in Thompson: 1996

Family Income (\$\$)	Number of Families (Total = 3,825)	Percentage of Total Families
Under \$10,000	230	6.1%
\$10,000 - \$19,999	420	11.0%
\$20,000 - \$29,999	205	5.4%
\$30,000 - \$39,999	290	7.6%
\$40,000 - \$49,999	325	8.5%
\$50,000 - \$59,999	320	8.4%
\$60,000 - \$69,999	490	12.8%
\$70,000 - \$79,999	345	9.0%
\$80,000 - \$89,999	345	9.0%
\$90,000 - \$99,999	295	7.7%
\$100,000 and greater	565	14.8%
Average Family Income:		
Thompson	\$62,918	
Manitoba	\$50,236	

Source:

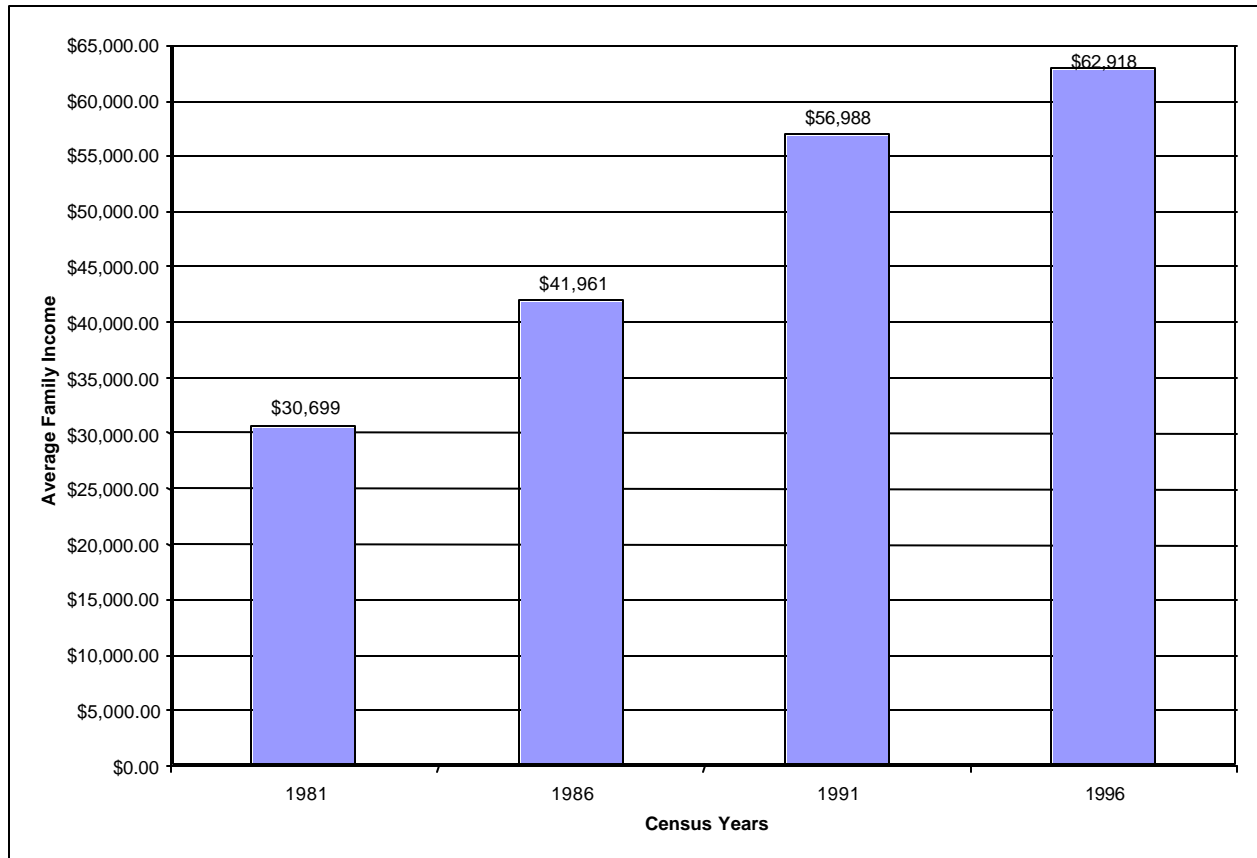
1. Statistics Canada 1996 Census of Canada.

Notes:

1. Incomplete data: 20% sample data.
2. Totals may not add due to rounding.

Figure 3.18 below indicates that, without accounting for inflation, average family income has increased each Census year from 1981 to 1996.

Figure 3.18
Average Family Income in Thompson: 1981, 1986, 1991 and 1996



Source:

1. Statistics Canada 1996 Census of Canada.

Notes:

1. Incomplete data: 20% sample data.
2. Totals may not add due to rounding.
3. Incomes cited adjusted for inflation.

Aboriginal Family Income

Table 3.30 below highlights the distribution of income among Aboriginal families living in Thompson as per the 1996 Census of Canada. As can be seen in the table, the average income of Aboriginal families at the time was \$40,645. This figure was significantly less than the average family income for all Thompson residents, which was \$62,918. The average Thompson Aboriginal family income was also less than the average Manitoba family income, which was \$50,236 in 1996. As can be seen in Figure 3.19, Aboriginal family income, without adjusting for inflation, has consistently increased over the Census years from \$18,947 in 1986 to \$40,645 in 1996.

Table 3.30
Family Income of Thompson's Aboriginal Residents: 1996

Family Income (\$\$)	Number of Families (Total = 1,145)	Percentage of Total Families
Under \$10,000	145	12.7%
\$10,000 - 19,999	290	25.3%
\$20,000 - 29,999	115	10.0%
\$30,000 - \$39,999	90	7.9%
\$40,000 - \$49,999	95	8.3%
\$50,000 - \$59,999	65	5.7%
\$60,000 - \$69,999	110	9.6%
\$70,000 or over	215	18.8%
Average Family Income:		
Aboriginal Family Income	\$40,645	
Thompson Family Income	\$62,918	
Manitoba Family Income	\$50,236	

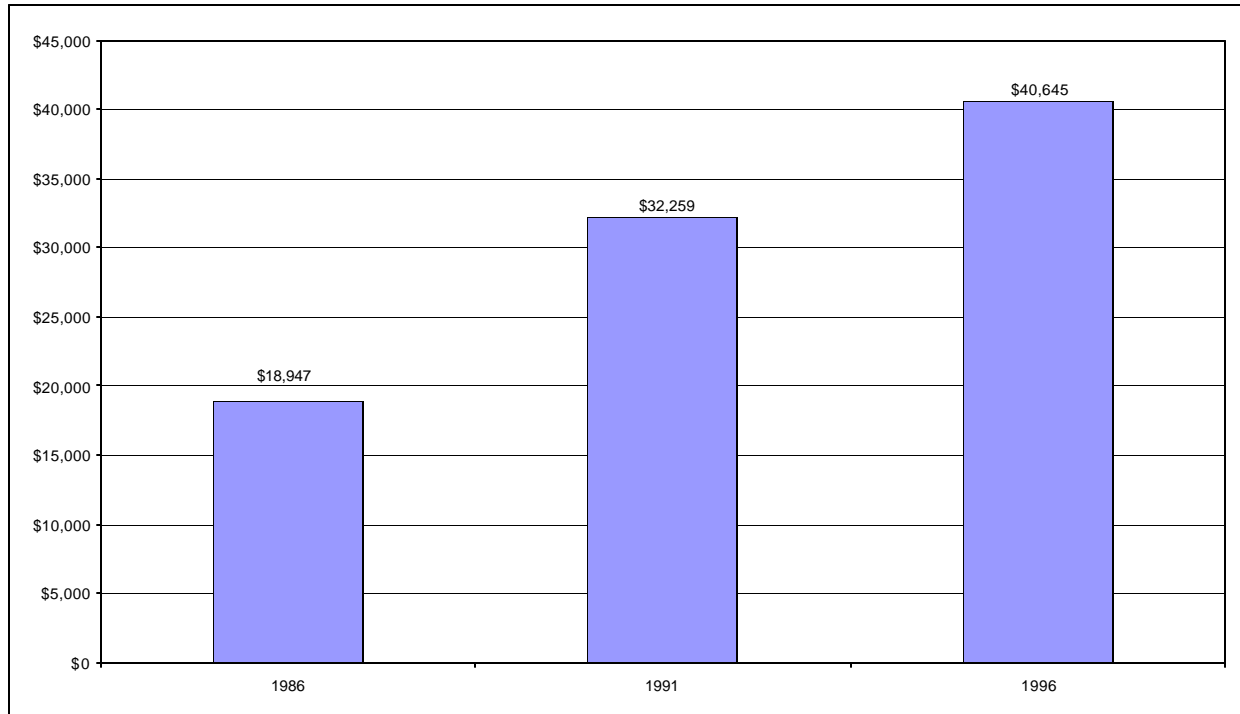
Source:

1. Statistics Canada 1996 Census of Canada.

Notes:

1. The definition of an Aboriginal person in the 1981 Census included Registered Indians and those individuals reporting Aboriginal ancestry. In the 1986 and 1991 Census years, the definition also included those individuals holding Band Membership. The definition of an Aboriginal individual for the 1996 Census includes Registered Indians, those reporting Aboriginal ancestry, those identifying as Aboriginal and all Band Members. In this figure, data from the 1996 Census of Canada has not been adjusted to align with the earlier Canadian Census definition of an Aboriginal person. For this reason, caution should be used when comparing data from the different years.
2. The definition of an Aboriginal family includes those households in which one spouse is defined as Aboriginal.
3. Incomplete data: 20 % sample data.
4. Totals may not add due to rounding.

Figure 3.19
Average Family Income of Thompson's Aboriginal Residents: 1986, 1991 and 1996



Sources:

1. Statistics Canada 1986 Census of Canada.
2. Statistics Canada 1991 Census of Canada.
3. Statistics Canada 1996 Census of Canada.

Notes:

1. The definition of an Aboriginal person in the 1981 Census included Registered Indians and those individuals reporting Aboriginal ancestry. In the 1986 and 1991 Census years, the definition also included those individuals holding Band Membership. The definition of an Aboriginal individual for the 1996 Census includes Registered Indians, those reporting Aboriginal ancestry, those identifying as Aboriginal and all Band Members. In this figure, data from the 1996 Census of Canada has not been adjusted to align with the earlier Canadian Census definition of an Aboriginal person. For this reason, caution should be used when comparing data from the different years.
2. The definition of an Aboriginal family includes those households in which one spouse is defined as Aboriginal.
3. Incomplete data: 20 % sample data.
4. Totals may not add due to rounding.
5. Incomes cited are not adjusted for inflation.

Household Income

The average household income in Thompson, as per the 1996 Census of Canada, was \$59,314. This was greater than the provincial household average of \$50,236 (see Table 3.31).

Table 3.31
Average Household Income and Distribution of Income
of all Private Households in Thompson: 1996

Household Income (\$\$)	Number of Households (Total number of households = 4,935)	Percentage of Total Households
Under \$10,000	340	6.9%
\$10,000 - \$19,999	580	11.8%
\$20,000 - \$29,999	335	6.8%
\$30,000 - \$39,999	400	8.1%
\$40,000 - \$49,999	500	10.1%
\$50,000 - \$59,999	490	9.9%
\$60,000 - \$69,999	545	11.0%
\$70,000 - \$79,999	440	8.9%
\$80,000 - \$89,999	355	7.2%
\$90,000 - \$99,999	320	6.5%
\$100,000 and greater	635	12.9%
Average Household Income:		
Thompson	\$59,314	
Manitoba	\$50,236	

Source:

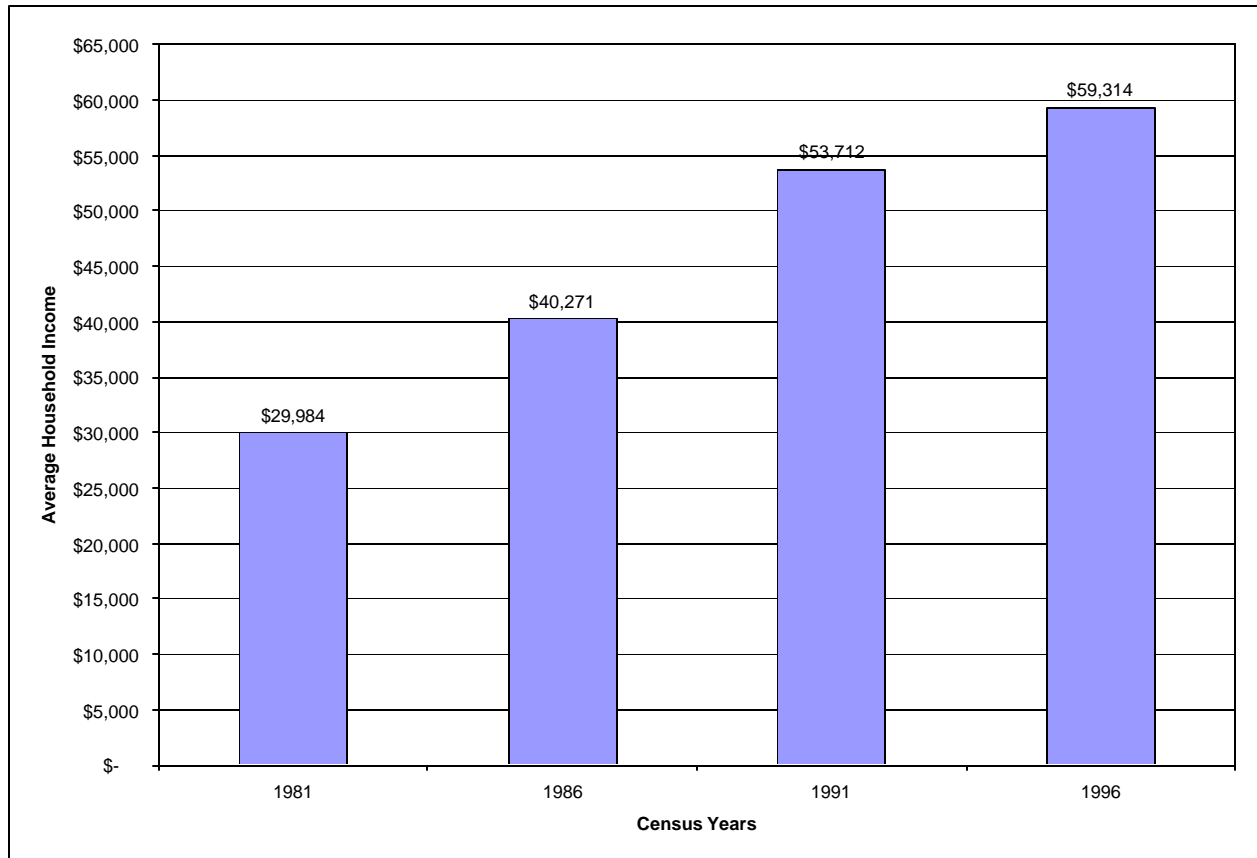
1. Statistics Canada 1996 Census of Canada

Notes:

1. Incomplete data: 20% sample data.
2. Totals may not add due to rounding.

Much like average family income, an upward trend in average household income has been observed since 1981, with numbers almost doubling between the 1981 and 1996 Census years, prior to an inflation adjustment (see Figure 3.20).

Figure 3.20
Distribution of Average Household Income in Thompson: 1981, 1986, 1991 and 1996



Source:

1. Statistics Canada 1996 Census of Canada.

Notes:

1. Incomplete data: 20% sample data.
2. Totals may not add due to rounding.
3. Incomes cited are not adjusted for inflation.

Household Income of the Aboriginal Population

Table 3.32 below outlines the income distribution among Aboriginal households in Thompson. As can be seen in the table, the average Aboriginal household income in 1996 was \$40,060. Once again, this figure was well below that of the average of the total Thompson population of \$59,314. The provincial average household income fell roughly between the two at \$50,236.

Table 3.32
Household Income Distribution Among Thompson's Aboriginal Population: 1996

Household Income (\$\$)	Number of Households (Total = 1,425)	Percentage of Households
Under \$10,000	195	13.7%
\$10,000 - \$19,999	350	24.6%
\$ 20,000 - \$29,999	145	10.2%
\$ 30,000 - \$39,999	95	6.7%
\$ 40,000 - \$49,999	145	10.2%
\$ 50,000 - \$59,999	105	7.4%
\$ 60,000 - \$69,999	115	8.1%
\$ 70,000 or over	260	18.2%
Average Family Income:		
Aboriginal Family Income	\$40,060	
Thompson Family Income	\$59,314	
Manitoba Family Income	\$50,236	

Source:

1. Statistics Canada 1996 Census of Canada.

Notes:

1. The definition of an Aboriginal person in the 1981 Census included Registered Indians and those individuals reporting Aboriginal ancestry. In the 1986 and 1991 Census years, the definition also included those individuals holding Band Membership. The definition of an Aboriginal individual for the 1996 Census includes Registered Indians, those reporting Aboriginal ancestry, those identifying as Aboriginal and all Band Members. In this figure, data from the 1996 Census of Canada has not been adjusted to align with the earlier Canadian Census definition of an Aboriginal person. For this reason, caution should be used when comparing data from the different years.
2. The definition of an Aboriginal household includes those households where either one spouse is Aboriginal, or where 50 per cent of all other members are Aboriginal.
3. Incomplete data: 20 % sample data.
4. Totals may not add due to rounding.

3.1.3.1.3 Education and Training

Table 3.33 highlights the education levels of Thompson residents 15 years of age and over for the Census years 1981, 1986, 1991 and 1996. The number of residents with a certificate or diploma in a trade was at its highest in the most recent, 1996, Census year. At this time 530 people, or 5.2 per cent of the population age 15 and over, possessed a trades certificate or diploma.

Table 3.33
Total Population 15 Years and Over in Thompson by
Highest Level of Schooling: 1981, 1986, 1991 and 1996

Level of Education	1981	1986	1991	1996
Total Population age 15 and over	9,480	10,055	10,620	10,170
Less than Grade 9	14.3%	12.0%	9.0%	8.6%
Grades 9 to 13	47.4%	46.0%	45.0%	41.6%
• Without secondary school graduation certificate	36.8%	36.0%	33.0%	29.8%
• With secondary school graduation certificate	10.6%	10.0%	12.0%	11.8%
Trades certificate or diploma	3.2%	3.0%	4.0%	5.2%
Other Non-university education only	19.6%	21.0%	23.0%	24.6%
• Without certificate or diploma	4.8%	5.0%	6.0%	5.6%
• With certificate or diploma	14.7%	16.0%	17.0%	19.1%
University	15.4%	18.0%	19.0%	19.9%
• Without degree	8.5%	10.0%	11.0%	10.2%
• With degree	6.9%	7.6%	8.0%	9.7%

Sources:

1. Statistics Canada 1981 Census of Canada.
2. Statistics Canada 1986 Census of Canada.
3. Statistics Canada 1991 Census of Canada.
4. Statistics Canada 1996 Census of Canada.

Notes:

1. Incomplete data: 20% sample data.
2. Totals may not add due to rounding.

Education Levels Among Thompson's Aboriginal Population

Table 3.34 below presents the highest level of education completed by Thompson's Aboriginal Population ages 15 and over for the Census years 1981, 1986, 1991 and 1996. Based on this table, average education levels among this population appear to be increasing. The proportion of the Aboriginal population with less than Grade 9 education decreased from 33.5 per cent in 1981 to 20.1 per cent in 1996. As well, the proportion of the Aboriginal population who had some form of trades training increased from 14.2 per cent in 1981 to 23.0 per cent in 1991, and further to 32.5 per cent in 1996. Among those Aboriginal people with trades training, 7.5 per cent held a trades degree or certificate. This proportion was higher than that for both the overall Thompson and provincial populations.

Table 3.34
Total Aboriginal Population 15 Years of Age and Over by
Highest Level of Schooling: 1981, 1986, 1991 and 1996

Characteristics	1981	1986	1991	1996
Total Population age 15 and over	880	1,695	2,450	1,740
Less than Grade 9	33.5%	29.8%	19.2%	20.1%
Grades 9 to 13:	42.0%	45.1%	45.5%	42.8%
• Without secondary school graduation certificate	38.6%	39.8%	39.6%	33.6%
• With secondary school graduation certificate	2.8%	5.3%	22.2%	8.9%
Trade and non university only	14.2%	15.2%	22.2%	32.5%
• Without Certificate or diploma	4.5%	7.0%	5.7%	11.5%
• With certificate of diploma	9.6%	8.5%	16.3%	19.3%
University:	9.7%	10.0%	12.9%	11.5%
• Without degree	9.7%	8.2%	10.8%	7.5%
• With Bachelor's degree or higher	0%	1.5%	2.2%	3.7%

Sources:

1. Statistics Canada 1981 Census of Canada.
2. Statistics Canada 1986 Census of Canada.
3. Statistics Canada 1991 Census of Canada.
4. Statistics Canada 1996 Census of Canada.
5. Data received from the Department of Indian and Northern Affairs, December 18, 2001.

Notes:

1. The definition of an Aboriginal person in the 1981 Census included Registered Indians and those individuals reporting Aboriginal ancestry. In the 1986 and 1991 Census years, the definition also included those individuals holding Band Membership. The definition of an Aboriginal individual for the 1996 Census includes Registered Indians, those reporting Aboriginal ancestry, those identifying as Aboriginal and all Band Members. In this figure, data from the 1996 Census of Canada has not been adjusted to align with the earlier Canadian Census definition of an Aboriginal person. For this reason, caution should be used when comparing data from the different years
2. Incomplete data: 20% sample data.
3. Totals may not add due to rounding.

3.1.3.2 Business

Table 3.35 highlights the number and type of businesses operating in Thompson. The information in this table should be used with caution, as it is not a current listing.¹⁵ As can be seen in the table, there is a wide array of businesses operating in the community. The number and type of businesses in Thompson represent a shift away from central reliance on the INCO mine and its operations. Available goods and services range from retail outlets and a variety of restaurant and hospitality businesses, to firms providing industrial service and supply and a well-established transportation sector. With the increasing reliance on the community as a regional service and supply center by outlying northern and Aboriginal communities, it is expected that the business sector will only expand in the future (North Central Development Corporation, personal communication, 2002).

Small-scale entrepreneurship and business ownership has, however, been challenged by three factors. First, employment opportunities at INCO, typically offering relatively high wages, have prevented greater activity and investment in the retail sector. Second, in the past 5 to 7 years a number of franchises have opened in Thompson, making it difficult for smaller and/or family businesses to compete (North Central Development Corporation, personal communication, 2002; Thompson Chamber of Commerce, personal communication 2002). A final limiting factor to retail and commercial business development in Thompson is the existence of a three-year business cycle driven by INCO contract negotiations. Scepticism and speculation regarding INCO's future in the community begins at the time of negotiations. This speculation is often coupled with a decline in consumer spending (North Central Development Corporation, personal communication, 2002).

Table 3.35
Listing of Business, Trade and Professional Services available
in the City of Thompson: 2001

Business, Trade or Professional Service	Number of Firms
Accommodations	
Bed and Breakfasts	2
Campgrounds	1
Hotels	6
Agricultural Services and Supplies	
Auction mart/sales	1
Veterinarian, livestock	1
Automotive	
Auto dealership	3
Auto fuel sales (no mechanic-gas bar)	4

¹⁵ For a more recent listing of individual businesses see Appendix 2, which contains the most recent membership listing maintained by the Thompson Chamber of Commerce. This listing is not reported here, as not all businesses register as members with the Thompson Chamber of Commerce. Although the listing has been cross-referenced with the Thompson phone book, it should be used with caution as it may contain errors and omissions.

Business, Trade or Professional Service	Number of Firms
Car washes	2
Propane gas	3
Recreational vehicle sales (boats, snowmobiles, off road vehicles, etc)	2
Recreational vehicle sales (trailers/capers, etc)	1
Service stations with mechanic(s)	3
Construction/Hardware	
Landscapers, lawn service	2
Lumber / Hardware	2
Financial	
Banks	4
Food and Beverages	
Bakeries	1
Beverage rooms, lounges, etc	7
Convenience stores	2
Grocery stores	2
Liquor stores	1
Meat shops, butchers	1
Restaurants, drive-through or drive-in	4
Restaurants, licensed	9
Restaurants, sit-down, not licensed	9
Furniture, Appliance/Home	
Audio, video, electronic stores	3
Computer stores	1
Flooring and window coverings	1
Furniture / Appliance Stores	3
Paint / wall covering stores	1
Video rental / sales stores	1
General Merchandise	
Book stores	1
Clothing stores, other	1
Department stores	2
Florists / indoor plants	2
Office supplies, stationary	1
Pet sales	1
Pet supplies	6
Pharmacies / drug stores	6
Photography / camera store	1
Shoe stores	1
Other Services	
Barber shops / hair salons	5

Business, Trade or Professional Service	Number of Firms
Dry cleaners	2
Funeral services	1
Insurance agents	4
Kennels, commercial	1
Laundromats	2
Printers	2
Realtors	3
Sign makers	1
Travel agents	3
Professional Services	
Veterinarians, pets	1
Repair Services	
Appliance repair	1
Machine shops / welding	1
Small engine repair	3

Source:

1. Mystery Net Project, 2001

INCO's experience in the community indicates that there are a number of local firms capable of providing service and supply to industry (see Appendix 3 for a listing of local firms offering industrial service and supply in Thompson). The all-weather road connection between Thompson and Winnipeg, however, also makes the transportation of goods between industrial centers a viable option. Important services available locally include sale and repair of heavy equipment (Caterpillar/Tormont), hydraulic repair, sale of large tires and retreads (e.g. North Land Tire), safety and industrial outfitting, and fabrication. Of these, fabrication is the one service currently running close to capacity (INCO, personal communication, 2002).

There are three major trucking companies, with bases in Thompson, capable of servicing the industrial sector:

- Gardewine North, has two terminals and eight loading docks located in Thompson. The company typically ships 8 to 11 cross-dock truckloads a night from Winnipeg to the North. Gardewine North is also capable of transporting bulk northern cartage.
- Kleyson Transport, specializes in bulk/deck type transportation. The company has worked for INCO for the past 20 years, and has experience transporting large quantities of material into and out of Thompson. On an average weekend the company delivers 5 to 15 truckloads of goods from southern Manitoba to northern Manitoba, while also dropping off 2 to 5 truckloads of nickel. Kleyson Transport also has the equipment to hook up to rail cars.
- Reimer Manitoba, which specializes in Less-than Truck Loads (LTL) (INCO, personal communication, 2002).

3.1.4 Built Environment and Community Services

3.1.4.1 Transportation Infrastructure

3.1.4.1.1 Roads

External Road System

Thompson is connected to Lynn Lake and Nelson House via Provincial Road (PR) 391, and to Split Lake and Gillam by PR 280. Thompson is connected to Winnipeg by Provincial Trunk Highway (PTH) #6, an all weather two-lane highway. The travelling distance between Thompson and Winnipeg by highway is 756 kilometres, or approximately eight hours. Thompson is nine hours from the Canada/United States border (Mystery Net Project 2001).

A number of trucking firms make runs between Thompson and Winnipeg. Those with depot facilities in Thompson include: Gardewine, Reimer Express Lines Ltd. and Kleysen (Mystery Net Project 2001).

Highway Classification

In Manitoba, highways under the control of the Minister of Transportation and Government Services (MTGS) are classified as Road and Transportation Association of Canada (RTAC) Routes, Class A1 or Class B1 Highways. Highway classifications are set according to axle loading and gross vehicle weight capacity. [Table 3.36](#) below outlines the classifications of the two access roads into Thompson of relevance to this study: PTH 6 and PR 391. As can be seen in the table, a large portion of PR 391 is recognized by MTGS as a seasonal RTAC roadway. This means that between December 1 and the last day of February gross vehicle weights of 62.5 tonnes are permitted on the roadway. During the remainder of the year, vehicle weights are restricted to 55 tonnes. PTH 6 is recognized by MTGS as a RTAC route year-round allowing for a maximum gross vehicle weight of 62.5 tonnes. The posted speed limit is 90 kilometres per hour (kph) on PR 391, and 100 kph on PTH 6 (ND Lea 2002).

Table 3.36
Vehicle Weights and Dimensions Classifications Under
Provincial Highway Regulation M.R. 575/88: 2001

RTAC Routes
PTH 6: From its junction with PTH 101 to Thompson.
PR 391: From the City of Thompson to the Thompson Airport access road.
Thompson Airport Access Road: From its junction with PR 391 to the southern boundary of the Thompson Airport.
Seasonal RTAC Routes (Classification is restricted to December 1 to the last day of February of each year)
PR 391: From Thompson to the Town of Leaf Rapids.
Class A1 Highway
PR 391: From its junction with Riverside Drive in the City of Thompson to the Unincorporated Village District of Lynn Lake.

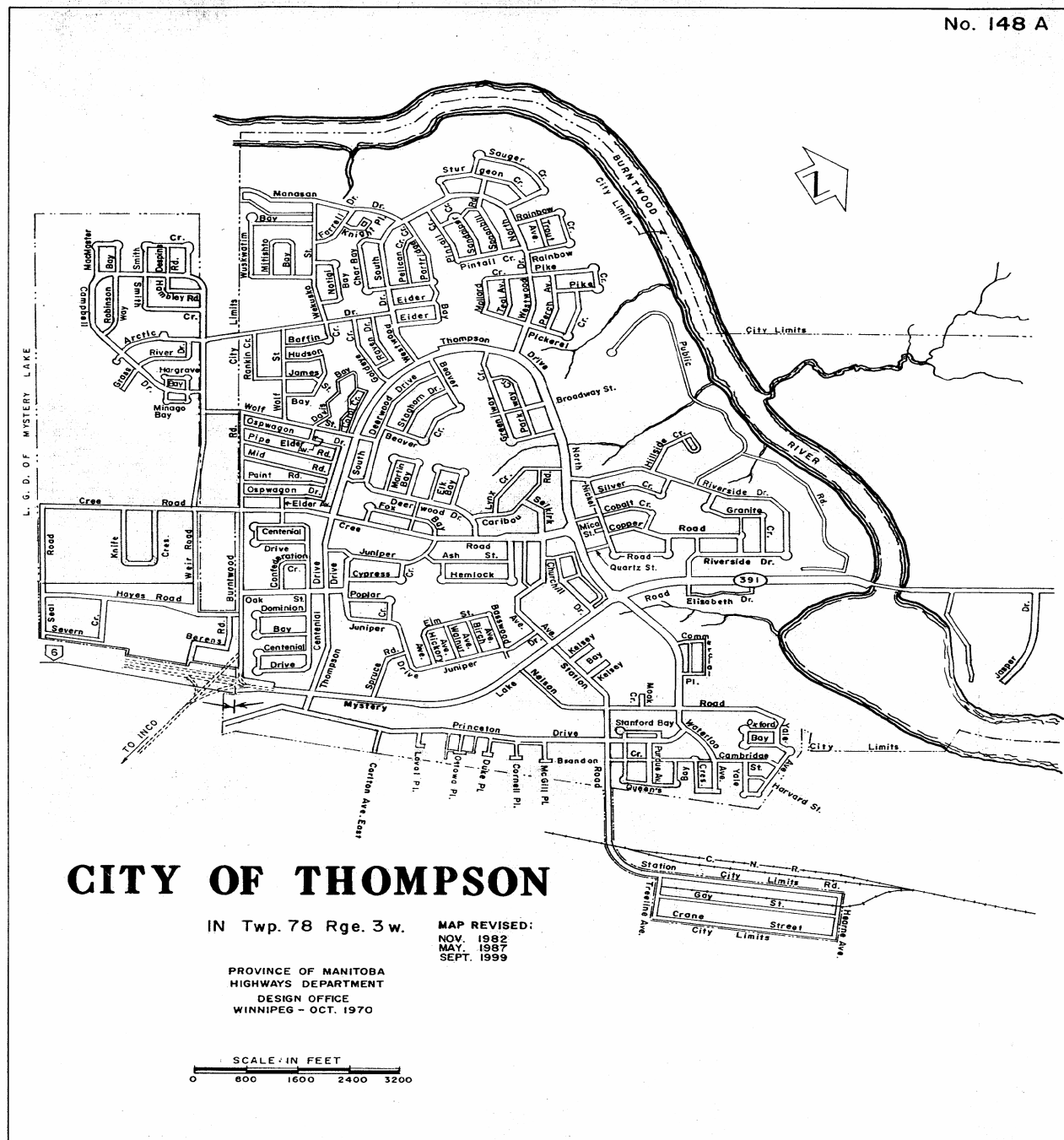
Source:

1. Manitoba Transportation and Government Services 2001.

Internal Road System

The internal road system of Thompson, as seen in [Figure 3.21](#), was developed in a cloverleaf design on a central circle - Thompson Drive North and South. Thompson Drive is U-shaped and intersects Mystery Lake Road at both the north (Maclean Park) and south end (Heritage North Museum) to form a loop. Its route follows the natural contour of the Burntwood River, as the City of Thompson is situated in a bend of the River (Design North 2000).

Figure 3.21
Thompson's Internal Road System: 1999



Source: Manitoba Transportation and Government Services 1999

The internal road system serves to divide the City into 7 different districts:

- An Industrial District is located along the west side of the PTH 6 before reaching the Thompson Bus Depot when entering the City from the south.
- The Eastwood District is further south along Mystery Lake Road where it intersects Station Road. This is where the Keewatin Community College is located.
- Another Industrial District is located by the Thompson Train Station when proceeding east along Station Road.
- The Southwood District is located west along Thompson Drive south just past the Hospital, on the southwest side of Thompson Drive and Juniper District to the northeast.
- Thompson Drive South will then enter the Burntwood District to the west and Deerwood District to the east, which acts as the interior area of Thompson Drive loop.
- The Westwood District is located along a bend in the Burntwood River to the northwest of the Deerwood District.
- The area to the east along the River is known as the Riverside District and is located in the northwest quadrant of the intersection of Mystery Lake Road and Thompson Drive North (Design North 2000).

Within its internal road system, Thompson has an extensive West Bus Route and East Bus Route. These buses run regularly and each route is scheduled to take no longer than twenty-five minutes. There are also pedestrian paths throughout various parts of the City, in order to make many areas more accessible to pedestrians (Design North 2000).

PTH 6 becomes PR391 at the southern City limit of Thompson. Within the City limits, PR 391 is a four-lane divided street, called Mystery Lake Road and is the primary thoroughfare in the City (Design North 2000).

3.1.4.1.2 Air Transportation

Airport and terminal facilities are located approximately 10 kilometres outside of Thompson. The airport is serviced by Calm Air, which provides four daily jet service flights and guaranteed overnight freight service (Thompson Municipal Airport 2001). Calm Air schedule flights to Winnipeg, Flin Flon and The Pas. The airport also serves as a base for Pimichikamac Air, Skyward Aviation, Custom Helicopters, Manitoba Government Air, RCMP Air Division and Dene Cree Air (Thompson Municipal Airport 2001). The largest aircraft using the airport is the Boeing 737. Flight time from Winnipeg to Thompson is approximately two hours (Mystery Net Project 2001).

The airport covers a total area of 1,083 acres, and has two runways (Manitoba Intergovernmental Affairs 2001). Airport facilities consist of an air terminal building, an air traffic control tower with limited hours of operation, a flight service station and a maintenance garage (Manitoba Intergovernmental Affairs 2001).

In 1997 air carriers transported 168,000 passengers and 30,792 aircraft to and from the Thompson airport (Mystery Net Project 2001).

Thompson is also accessible by float plane via the Burntwood River (Manitoba Intergovernmental Affairs 2001).

3.1.4.1.3 Bus Transportation

Every day two buses arrive in Thompson from, and depart to, Winnipeg and other destinations. Bus services are provided by Grey Goose Bus Lines. Seats are not reserved in advance. The Grey Goose bus service can also be used for the transportation of freight (Mystery Net Project 2001).

The Grey Goose coaches have a 54-person seating capacity, so the daily capacity for transporting individuals from Thompson to destinations in Manitoba, and vice versa, is 108 persons (Grey Goose Bus Lines Personal Communication 2001).

3.1.4.1.4 Rail Transportation

Via Rail services the Winnipeg to Churchill route three times per week. The service allows passengers to board and exit the train at Thompson, providing transportation to points both north and south of the City. The Hudson Bay Railway Company offers freight services (Mystery Net Project 2001).

The travelling distance between Thompson and the Port of Churchill is 1,608 kilometres (Manitoba Intergovernmental Affairs 2001).

The seating capacity of the Hudson Bay train, the unit used by Via Rail along the Winnipeg to Churchill route, is 130 persons. The weekly transportation capacity between Winnipeg and Thompson is 390 persons one way (Via Rail personal communication 2001).

3.1.4.2 Community Infrastructure and Services

3.1.4.2.1 Housing and Accommodation

Thompson's Housing

Development of housing in Thompson has historically been associated with growth in INCO Ltd.'s operations in Thompson. This is well reflected in [Table 3.37](#) below, which shows that the greatest growth in housing occurred over the period from 1961 to 1970, shortly after INCO Ltd. made its initial nickel discovery (1956) and the townsite was developed.

Table 3.37
Construction of Dwelling Units in Thompson: Before 1946 to 1992-1996

Construction Date	Number of Dwelling Units Constructed
Before 1946	55
1946-1960	400
1961-1970	2,815
1971-1980	1,255
1981-1985	115
1986-1991	280
1992-1996	72

Source: Statistics Canada 1996.

The number of dwelling units in Thompson has remained relatively stable over the past fifteen years, as seen in Table 3.38 below. Only marginal increases were recorded over the Statistics Canada Census years of 1986, 1991 and 1996. An eight per cent increase in the total number of occupied private dwellings occurred over the period from 1986 to 1996, as compared to a 9 per cent in Manitoba as a whole.

Table 3.38
Occupied Private Dwellings in Thompson: 1986, 1991 and 1996

Types of Housing	1986	1991	1996
Single-detached house	2,280	2,195	2,400
Semi-detached house	N/A	165	150
Row house	N/A	400	365
Apartment, detached duplex	N/A	5	0
Apartment building, five or more stories	330	330	345
Apartment building, less than five stories	250	1,390	1,275
Other single attached house	N/A	N/A	0
Movable Dwelling	N/A	435	390
All other types	1,675	N/A	N/A
Total number of occupied private dwellings	4,545	4,925	4,935

Source: Statistics Canada 1996, 1991 and 1986 Census of Canada

Notes:

1. The above figures vary in terms of the per centage of residents sampled. In 1986 and 1991, 100% of the population was sampled. In 1996 only 20% of the population was sampled.
2. An "Occupied Private Dwelling" refers to a private dwelling in which a person or group of persons are permanently residing. Also included are private dwellings whose usual residents are temporarily absent on Census Day. These data, however, exclude private dwellings occupied solely by foreign and / or temporary residents (Profile of Census Divisions and Subdivisions in Manitoba-Part A, 1996).

As of January 2002, the City of Thompson Post Office reported that there were 3,336 duplexes and houses in Thompson (City of Thompson, personal communication, 2002). According to local real estate agents, many more dwelling units are unoccupied. Representatives of the Remax Bee Realty (Wayne Grier), Century 21 Sherry's Real Estate (Murray Kadys) and Locker's Real Estate (Stella Locker) all

indicated that there were approximately 100 to 150 dwelling units currently available in the Thompson area. This figure is well above the annual average of approximately 50 houses for sale. The average price of these units ranges from \$85,000 to \$115,000 (City of Thompson real estate agents, personal communication, 2002).

There are also several building lots available for those interested in building a home. In 1999, a \$1.4 million housing development on the southwest side of the City, known as Burntwood South, was developed and approximately 24 of the original 27 lots are still available. It is believed that the approximately \$35,000 (\$3 per square foot), cost of these lots may be too expensive for the current Thompson housing market. As well, only portions of this two-block area currently have water and sewer services (City of Thompson, personal communication, 2002).

Thompson's Apartments

The above [Table 3.40](#) indicates that there were 1,620 apartments in Thompson in 1996 (Statistics Canada 1996). As of January 2002, the City of Thompson Post Office reported that there were 1,709 apartments in Thompson (City of Thompson, personal communication, 2002). There is typically less than a 10 per cent vacancy rate for apartments in the City, with a slight (about 5 per cent) increase in vacancy during the summer months when local schools and universities are closed (City of Thompson real estate agents, personal communication, 2002).

Rent for a one-bedroom apartment is approximately \$400 to \$500 per month, and a two-bedroom apartment costs between \$500 and \$600 per month (City of Thompson real estate agents, personal communication, 2002).

Temporary Accommodation in Thompson

Temporary accommodation in Thompson includes hotels, bed and breakfasts and hostels.

[Table 3.39](#) indicates that there are almost 400 rooms available in hotels and bed and breakfast facilities in the community.

Table 3.39
Thompson's Hotel and Bed & Breakfast Rooms: 2001

Name of Accommodation	Number of Rooms
Hotels	
Country Inn & Suites	61
Mystery Lake Motor Hotel	69
Ramada Hotel	58
Thompson Inn	43
Meridian Motel	41
Interior Inn	54
Northern Inn & Steak House	22
Bed & Breakfasts	
Anna's Bed & Breakfast	1
Northern Lights Bed & Breakfast	6
Shinook's Bed & Breakfast	7
Total Number of Rooms	362

Source: Manitoba Intergovernmental Affairs 2001.

In general, the cost of a hotel room in Thompson ranges from \$40 to \$80 for a single room and \$45 to \$90 for a double room. Rates at bed and breakfasts vary from \$40 to \$55 for a single room and \$50 to \$60 for a double room (including breakfast).

There are also two hostels in Thompson:

- The Ma Mow We Tak Friendship Centre has 26 beds.
- The YWCA Residence has 104 beds (Manitoba Intergovernmental Affairs 2001).

The daily rate for the YWCA is \$35, and an additional \$15 to include three meals plus a snack (YWCA, personal communication, 2002). In some circumstances, weekly and monthly rates are also available.

Campgrounds and Lodges in the Thompson Area

McCreedy Park, on the northern edge of Thompson, and Paint Lake Provincial Park, 30 kilometres south of Thompson, are the closest camping areas. The camping season extends from May long-weekend until September long-weekend. Electrical service, and unserviced, lots are available in each of these camping areas.

Sasagiu Rapids Lodge is located 77 kilometres south of Thompson on Setting Lake. Camping facilities are also available through the lodge (Manitoba Intergovernmental Affairs 2001).

3.1.4.2.2 Water and Sewer Services

The Burntwood River supplies fresh water to Thompson's water treatment plant. The water treatment includes solid contact units, a rapid mix cell and an anthracite coal filtration cell. The system has a pumping capacity of 3,500 gallons per minute from each of its three main pumps. Additional pumps can be used during emergencies, such as fires. Normal usage is approximately 3.0 million gallons per minute,

while peak consumption is 4.0 million gallons per minute. The pressure is rated at 65 pounds per square inch in both the line and the plant (City of Thompson, personal communication, 2002). The rated capacity is 23,000 cubic metres or 6.1 million gallons (Manitoba Intergovernmental Affairs 2001).

All developed areas within the City of Thompson are covered by the municipal water system. This system is localized and does not provide service to any other areas or communities. There is no cost for the water service. The water system is owned and operated by INCO Ltd. (Manitoba Intergovernmental Affairs 2001).

There is a water supply agreement between the City of Thompson and Manitoba Hydro that ensures that a continuing and satisfactory water supply is available to the City, i.e. one that is not be adversely affected by Hydro operations (City of Thompson 1976).

The sewage system in Thompson utilizes a primary system to remove solids and a large lagoon to aerate and later chlorinate the wastewater. The Thompson sewage treatment plant operates by gravity with lift stations. The system treats 40 to 50 million gallons of sewage per month and has ample reserve capacity (Mystery Net Project 2001). Almost all of Thompson's businesses and residences are served by the municipal sewage collection system and treatment facility (Manitoba Intergovernmental Affairs 2001).

Although the current sewage collection and treatment system has excess capacity, the 2001 City of Thompson Development Plan does indicate that treatment facilities for water or sewage should be constantly evaluated and examined for possible upgrading to meet provincial standards and regulations (Manitoba Intergovernmental Affairs 2001).

The Development Plan also recognizes future development activities could have an impact on sewage treatment and water distribution systems. It suggests that prior to starting new development programs, current unused capacity be determined, as well as projected costs for any necessary expansion of these systems (Thompson Community Planning Services Office 2001).

3.1.4.2.3 Waste Disposal Services

The City of Thompson shares a modern landfill site with the Local Government District of Mystery Lake. The site is located five kilometres south of the City. Garbage is removed once a week in residential areas and commercial establishments (City of Thompson, personal communication, 2002). The remaining capacity of the waste disposal grounds is 90 years (Manitoba Intergovernmental Affairs 2001).

Recycling facilities exist in the City, on both a drop-off and collection basis (Mystery Net Project 2001).

3.1.4.2.4 Educational Facilities & Services

Mystery Lake School Division #2355 provides elementary education in six local schools. Junior and senior high school is housed in R.D. Parker Collegiate, which has University Entrance, General and Business Education. Many vocational and post-secondary schooling options exist in and around Thompson. Day Care facilities are also available (Manitoba Intergovernmental Affairs 2001).

There are approximately 3,500 students enrolled in elementary school and highschool in Thompson. The student base has decreased by about 1,000 students over the past 12 years. Over the past ten years, there has been a large increase in the Aboriginal population entering the Thompson school system. In 2000, approximately 50 to 60 per cent of the students in Thompson were Aboriginal (Mystery Lake School Division, personal communication, 2002).

Decreasing enrollments have meant a corresponding decrease in funding provided to the School Division by the provincial government. Reductions in INCO's Grant-in-Lieu of Taxes have also impacted the School Division's budget since they receive 28 per cent of the payment. Overall, the INCO cutback has resulted in a loss to the School Division of close to half a million dollars in annual funding (Mystery Lake School Division, personal communication, 2002).

Elementary Schools

There are six elementary schools in Thompson:

- Burntwood School
- Deerwood School
- Eastwood School
- Juniper School
- Riverside School
- Westwood School

All offer Kindergarten to Grade 8 (Manitoba Intergovernmental Affairs 2001). The Westwood Elementary School is the only school currently operating near capacity. All of the others could accommodate additional students. To avoid closure, the Deerwood Elementary School, is being converted into a Kindergarten to Grade 4 school. Students in Grades 5 to 8 will be dispersed to other schools (Mystery Lake School Division, personal communication, 2002).

The Eastwood Elementary School is in the process of converting to a Cree bilingual school. At present, the school offers Cree immersion in Kindergarten, with "Cree as a second language" offered up to Grade 4. They plan to slowly move Cree immersion into subsequently higher grade levels and would eventually like to have Cree immersion up to Grade 12. This school is operated as a community school and the focus is on families. With such growth in the Aboriginal community, Cree language training may be moved to other schools in the future (Mystery Lake School Division, personal communication, 2002).

Secondary School

The regional high school, R.D. Parker Collegiate, houses Senior 1 to 4 (Grades 9 to 12), complete with University Entrance, General and Business Education curriculums (Manitoba Intergovernmental Affairs 2001).

Special services available to students include: French and Cree Language Programs, Resource Teachers, Physical Education and Music Specialists, Psychologist Services, Speech and Hearing Therapy, Industrial Vocation and Business and Work Education Programs (Manitoba Intergovernmental Affairs 2001). Trades training is also offered in the following areas: power mechanics, building construction and food services. In addition, the high school has developed an aviation technology program for 2002, which teaches

aircraft maintenance. This is being done in partnership with the local airline industry (Mystery Lake School Division, personal communication, 2002).

There are approximately 1,350 students enrolled in R.D. Parker Collegiate. The Collegiate has additional capacity and could accommodate more students. Each year approximately 180 students graduate (Mystery Lake School Division, personal communication, 2002).

Extra-curricular activities include volleyball, basketball, curling and chess, all of which have provided the community with both regional and provincial championships in recent years.

School facilities are used after-hours for adult educational upgrading, job-training and other areas of interest. Courses are sponsored by various government agencies, universities and colleges (Manitoba Intergovernmental Affairs 2001).

Adult, Continuing & Post-Secondary Education

First-Year Distance Education (F.Y.D.E.) provides first-year, post-secondary education to adults in Thompson. The program offers a full-range of courses and is provided jointly by the universities of Manitoba, Winnipeg, and Brandon.

Organizations offering adult education programs in the City of Thompson include:

- Keewatin Community College
- Inter-Universities North
- University of Manitoba
- Brandon University Teacher Education Program (BUNTEP)
- Ma Mow We Tak Friendship Centre
- Access North Northern Nursing Program
- Multi-Cultural Centre
- Thompson Reading Aides Corporation
- Awasis Training Institute
- Faculty of Social Work at Thompson (University of Manitoba's Northern Program)
- New Careers North

Upgrading programs are available through the following programs: Ma Mow We Tak Literacy Program, Thompson Reading Aides Corporation and the Multi-Cultural Centre Language Program (Manitoba Intergovernmental Affairs 2001).

Day Care

The City of Thompson offers group day care and family day care services.

There are six group day care centres in Thompson (Manitoba Intergovernmental Affairs 2001):

- Keewatinowi Asawisak Opi-Ki-Wak Incorporated
- Riverside Day Care Centre (YWCA)
- Teekinakan Day Care Centre

- Thompson Children's World
- Thompson Day Care
- Thompson Toddler's Day Care

Group day care rates are approximately \$27 per day for infants, and \$18 per day for preschool or school-age children. Some parents may qualify for a government subsidy to help pay their day care fees (Manitoba Intergovernmental Affairs 2001). Since June 2000, there have been no openings for additional children at any of the group day care centres, and there is a waiting list for spots that become available. There are, however, plans to expand the Riverside Day Care Centre and Thompson's Children's World (Thompson Day Care, personal communication, 2002).

Thompson also has seven licensed family day care homes, each caring for a small number of children. Each home meets standards set by the provincial government. Family day care rates are approximately \$20 per day for infants, and \$16 per day for preschool children (Manitoba Intergovernmental Affairs 2001). Currently, all of these facilities are full and have no additional space or resources to accommodate additional children (Thompson Day Care, personal communication, 2002).

Nursery Schools

There are two nursery schools in Thompson - Juniper Pre-School and Kiddies Northern Nursery School. Nursery schools take younger pre-school children for two and a half hours in the mornings and older pre-school children for two and a half hours in the afternoons. There is a fee at each of the nursery schools (Manitoba Intergovernmental Affairs 2001). Currently, both of these programs are full and have no additional space or resources to accommodate additional children (Thompson Day Care, personal communication, 2002).

3.1.4.2.5 Health Services

Health Services in Thompson are provided by a number of organizations, but for the most part fall under the jurisdiction of the Burntwood Regional Health Authority (BRHA). The BRHA has been in operation for six years and is the largest regional health authority in Manitoba. It includes most of Northern Manitoba lying north of the 53rd parallel, excluding areas around Flin Flon, The Pas and Churchill (See Figure 3.X). Thompson is the only city within the Burntwood Region and provides many of the health services utilized by the region's over 45,000 residents.

Current and proposed future health services provided in Thompson by both the BRHA and others are discussed below.

Hospitals, Health Centres and Medical Clinics

The following outlines services available at the local hospital, health centers and medical clinics. It should be noted that the services provided at these facilities are not provided consistently due to on-going difficulties in recruiting and retaining physicians (BRHA 2001).

Thompson General Hospital

The Thompson General Hospital is a 72-bed acute care facility when fully operational. Over the last year and a half, however, they have not been fully operational (23 beds are currently closed) because of a

shortage of nursing staff. The units affected are acute care in-patient (20 beds closed) and the intensive care unit (all 3 ICU beds are closed effectively closing the unit) (BRHA, personal communication, 2002).

Services provided at the Thompson General Hospital include:

- Primary care, emergency care, x-ray, laboratory, pharmacy, infection control, food-service, housekeeping, maintenance and medical records services.
- Special Care Unit (SCU), ultra sound, respiratory therapy, physiotherapy, speech pathology, audiology and nutrition counseling.
- Mammography screening program for breast cancer.
- The Burntwood Community Cancer Program, which is a satellite of the Manitoba Cancer Treatment and Research Foundation.
- The haemodialysis satellite program of the Winnipeg Health Sciences Centre.
- Education Services including the Regional Medical Library, video teleconferencing consultation with medical specialist and staff inservicing.
- Aboriginal Services including the coordination of interpreter service and traditional healing.
- With the recent redevelopment and expansion the hospital's Emergency Department and Admitting areas, CT (computer tomography) scanner services are now also available (BRHA 2001; BRHA 1997).

Burntwood Community Health Resource Centre

The main health centre in Thompson is the recently-completed Burntwood Community Health Resource Centre located in the Thompson Plaza. This facility brings together Thompson-based primary health care programs and community nursing programs. The goal of the Centre is to provide holistic, client-centred health care (BRHA 2001).

There are ten family physicians working in the Centre, with on-going recruitment to fill all twelve funded positions. Other professionals at the center include Nurse Practitioners, Community Health Nurses, Midwives, Family Counselors, Aboriginal Liaison Workers, a Nutritionist, a Health and Recreation Liaison Worker, and Lab Services Technicians (BRHA 2001).

The Centre also has a Health Resource Library, a Breast Feeding Room, a Traditional Healing Room, a Community Room and meeting rooms accessible to non-profit groups during the evenings and weekends (BRHA 2001).

Medical Clinics

Medical clinics in Thompson include the Northern Consultation Centre operated by the BRHA, as well as two private clinics.

Northern Consultation Centre

The Northern Consultation Centre is a specialist clinic that operates in association with the Hospital. The Centre is responsible for coordinating the services of various full-time specialists, as well as visiting specialists. These specialists include:

- 3 Obstetricians/Gynecologists

- 3 Pediatricians
- 1 Internal Medicine Specialist
- 1 Ear, Nose and Throat (ENT) Specialist
- 1 General Surgeon, as well as others who fly-in from Winnipeg
- Visiting dental and orthopedic surgeons (BRHA, personal communication, 2002)

Specialists at the Centre are part of a university-affiliated clinic that provides training for specialists in their senior years of residency. It receives back-up assistance and consultation from the Faculty of Medicine at the University of Manitoba (City of Thompson website 2000).

Private Medical Clinics

There are two private medical clinics in Thompson – the Southwood Medical Clinic and the Westwood Mall Medical Clinic. These are owned and operated by General Practitioners (City of Thompson website 2000).

Long-Term Care Facility

Although there are currently no long-term care facilities in Thompson, planning and fundraising are underway to design and start construction of such a facility by 2003. Functional programming for the facility began in 2001 and the BRHA is currently fundraising for the community contribution required to begin the project (BRHA 2001).

Health Programs

The BRHA and others offer a number of health programs in the community. These programs fall into three general categories - public health, mental health and home care. Each of these are discussed in turn.

Public Health Programs

Public health programs operated through the BRHA are provided by a variety of health professionals, including Public Health Nurses, Community Health workers, Dieticians, Medical Officer of Health and On-Call Workers. Programs provided in Thompson include the following:

- Prenatal Education: promotes healthy birth outcomes by providing information and support for expectant parents through classes or individual instruction.
- Post-partum Follow-up: all post-partum referrals in the Burntwood Region are contacted in the first week for assessment and to provide information and support to new families.
- Baby First: a recently-introduced program which provides intensive post-partum support for families considered to be at risk (BRHA, personal communication, 2001).
- Immunization: childhood immunization is provided in Child Health Clinics, schools, individually in the home or at scheduled appointments. Growth and development assessment, teaching and support are also provided in the Child Health Clinics and with individual immunizations. Adult immunization is provided for those traveling to other countries.

- School Health: Public Health Nurses visit schools to provide a variety of classroom presentations, teacher resources, liaison and immunization. Classroom presentations and teacher inservice topics have included personal safety, reproductive health, smoking awareness, sexually transmitted diseases (STD)/AIDS, family life, dental health, lice and scabies, self-esteem, drug awareness, fetal alcohol syndrome (FAS), and child asthma and allergies.
- Adolescent Health Education Centre: offered at R.D. Parker Collegiate, the goal of this program is to promote healthy lifestyles in the student population through education and counseling and to provide accessible health services to high school students. This is a joint program between Mystery Lake School Division, BRHA, Child and Family Services and the Addictions Foundation of Manitoba.
- Communicable Disease Control: goal is to reduce the incidence, spread and complications of communicable diseases (non-STD) and STDs. It involves the investigation and follow-up of cases, education, prevention and awareness activities, and pre- and post- HIV test counseling.
- Diabetes Education Resource: educates persons with diabetes and their families about self-care and provides education to health care providers and the general public about diabetes. The nursing and dietitian team is located in Thompson, but travels to other communities in the region.
- Community Health Promotion and Education: directed at promoting healthy lifestyles. Topics and activities include: AIDS awareness, Non-Smoking Week promotion, Active Living activities, Sexuality, Menopause, Breast Self-Exams, Bayline Newsletter, First Aid/CPR Training and Nutrition Education
(BRHA 1997)

Mental Health Programs

The main mental health program in Thompson is the Community Mental Health program, which is operated by the BRHA out of the Thompson General Hospital. This program provides assessment, consultation and treatment to individuals, families and communities. Programs and services provided include:

- Assessment, consultation and therapy to individuals and families (adults and children).
- Acute care treatment through the in-patient services in the hospital.
- Crisis stabilization through services such as the Canadian Mental Health safe house and the hospital.
- Supportive housing options using itinerant support and community caregivers.
- Self-help and family supports provided through formal associations of people with a common disorder.
- Psychosocial rehabilitation for persons with severe mental illness so that they are able to sustain community lifestyles.

- Prevention, promotion and public education.
- Proctor services for persons requiring one-to-one support.
- Critical incident stress debriefings.
- Adult psychiatric consultations through the consultation team.
- Child and adolescent psychiatric consultation contracted through the Manitoba Adolescent Treatment Centre (BRHA 1997).

The Community Mental Health Consultation Team consists of a psychiatrist, psychologist, social worker, registered psychiatric nurse and an occupational therapist (BRHA 1997). Referrals to the Community Mental Health Program are accepted from physicians, schools, other agencies and from community members themselves (BRHA 1997).

Additional mental health services in the community include:

- The Thompson General Hospital emergency room which manages a high volume of mental health crisis admissions.
- Workplace employee assistance programs.
- Canadian Mental Health Association programs.
- Self-help groups (BRHA 1997).

Home Care Program

The Home Care program in Thompson is the responsibility of the BRHA and provides health support services to clients and their families in their homes. Objectives of the program are to prevent institutionalization and to facilitate the early discharge of hospitalized patients. Components of the Home Care Program include the following:

- Support for individuals in their homes, including assistance with personal care, nursing care and household tasks. Direct service workers include Registered Nurses, Licensed Practical Nurses, Home Care Attendants, Home Support Workers and a Physiotherapist.
- Palliative care, which supports dying at home through coordinated services between the hospital and the community.
- The Discharge Planning Program which works to achieve a continuity of care between hospital and home (BRHA 1997).

Other Health Services

Dental Services

There are six dental clinics in Thompson. Each offers the following services: examinations, fillings, tooth extractions, crown/bridge work and dentures. Referrals are also available to other doctors or dentists who are specialists.

Table 3.40
Thompson's Dental Clinics: 2001

Dental Clinic	# Dentists	Referrals
City Dental Group	3	Oral surgeon
Mall Dental Centre	2	Periodontist
Westwood Dental Group	2	Pedodontist
Plaza Medical Dental Centre	N/A	-
Kafka Dental Clinic	N/A	-
Northern Denture Clinic Ltd.	N/A	-

Source: Manitoba Intergovernmental Affairs 2001

Eye Care Services

Three kinds of eye specialists serve the community:

- Ophthalmologists: medical doctors licensed to perform eye surgery and deal with medical problems of the eye.
- Optometrists: deal with eye problems that can be corrected with glasses or contact lenses. They have a doctorate in optometry but are not medical doctors and cannot prescribe medication.
- Opticians: trained and licensed to fit people with glasses, some are also licensed to fit people with contact lenses.

There are no resident ophthalmologists or optometrists in Thompson, but these specialists travel to the community regularly from Winnipeg (Manitoba Intergovernmental Affairs 2001).

Chiropractor

The Thompson Chiropractic Clinic is the only chiropractic clinic located in Thompson (Manitoba Intergovernmental Affairs 2001).

Pharmacies

There are five retail pharmacies in Thompson, including:

- Anne's Pharmacy Limited
- Canada Safeway Limited
- Clarke's Pharmacy
- Shoppers Drug Mart
- Wal-Mart Pharmacy (Manitoba Intergovernmental Affairs 2001)

These pharmacies are connected centrally through the Drug Program Information Network (DPIN), which provides billing information, individual allergy and prescription information (BRHA 1997).

3.1.4.2.6 Community Recreation

Recreation services for Thompson are primarily provided by the City of Thompson Recreation, Parks and Culture Department. Provincial agencies like the Department of Culture, Heritage and Citizenship, Health and Family Services and a number of volunteer and non-profit organizations also help to provide such services.

The City of Thompson Recreation, Parks and Culture Department evolved from a community-club style organization to become a department of the City. There currently are 26 full-time employees with another 39 seasonal or part-time positions. The Department is responsible for the implementation of a balanced recreation program in the community, facility management and green space development and maintenance.

The Department serves over 175 community agencies by providing various forms of community assistance, including:

- facility development
- facility maintenance
- advertising
- organizational support, and
- joint venture presentation of programs (Mystery Net Project 2001).

Recreation Facilities Operated by the City of Thompson

The Recreation Complex and the Norplex Pool are the primary recreation facilities operated by the City of Thompson.

The Recreation Complex includes:

- Two artificial ice arenas
 - C.A. Nesbitt Arena (seating capacity of 1,100)
 - Gordon Beard Arena (seating capacity of 300)
- Three racquetball courts
- A multi-purpose room used for activities such as judo, parent and tots club and gymnastics
- Administrative offices
- Economic Development Office of the City of Thompson

Surrounding the complex are a number of outdoor facilities, including the following:

- A 400-metre running track
- A baseball diamond
- Three tennis courts
- A fastball diamond
- A midway site
- A soccer field
- A six-sheet curling rink complete with artificial ice, lobby and bar area
- The Thompson Wildlife Building which includes an indoor rifle and hand gun range managed by private organizations, and

- The Thompson Zoo which houses a mix of northern wildlife and domestic animals, and is located on the Recreation Complex Grounds, behind the Thompson Wildlife Association Building (Mystery Net Project 2001).

A proposal has been submitted by the City of Thompson to construct a new recreation complex to replace the existing facilities. The proposed facility would house a theatre space, two indoor hockey arenas, a field house for volleyball, basketball, tennis, walking and running and a weight training area. The \$20 million proposal has been submitted to the Canada/Manitoba Infrastructure Program (City of Thompson, personal communication, 2002).

The Norplex Pool facility provides aquatic programming. The facility includes:

- A six-lane 25-metre pool
- Two one-metre diving boards
- A three-metre diving board
- A 250-foot waterslide
- A shallow end
- A sauna, and
- A weight room.

Additional outdoor facilities in the City of Thompson include fifteen baseball/fastball diamonds, two senior soccer fields, five junior soccer fields, five tennis courts, ten playgrounds, three outdoor rinks, two outdoor wading pools and 35 kilometres of cross-country ski trails.

The Thompson Public Library houses some 93,000 volumes of resource material and has extensive collections of books, magazines and videos in English and French. The library also offers Internet services (Mystery Net Project 2001).

The Heritage North Museum displays local historic artifacts, natural history exhibits and pioneer displays. Travelling exhibits are on display at various times throughout the year. The museum is also responsible for arranging tours of INCO Ltd. (Mystery Net Project 2001).

Programming Operated by the City of Thompson

The City of Thompson's Recreation, Parks and Culture Department provides support for programming in the following areas:

- Organized Sport
 - Ringette, curling, hockey, figure skating, bowling, gymnastics, martial arts, walleyball, volleyball, racquetball, ball hockey, badminton, basketball and swimming/diving.
- Other
 - Downhill skiing, snowboarding, tubing, bowling, swimming, dancing (ballet, jazz and East Indian) and snowmobiling.
 - Pottery classes and a kiln, coaching development clinics, Nickel Summer Arts Camp, Mighty Miner Sports Camp, Summer Wading Pools, swimming lessons for all ages, drama classes, exhibitions, workshops, volunteer development, arts performances, Canada Day Celebrations and public ice skating.

If a program or interest is not being met in the community and a need is established, assistance in providing that activity will be given until such time that it can operate on a self-sufficient basis (City Recreation, Parks and Culture Department 2002).

Each September, the City's Recreation Department and the City's Department of Health and Family Services coordinate the Thompson Health and Leisure Mart in the C.A. Nesbitt Arena. The Health and Leisure Mart is a weekend mini-fair with display booths containing information about local arts, sports, recreation activities, community service organizations and educational opportunities. This is the place to register for ice skating lessons, karate, dance, aerobics, pottery, quilting or other leisure activities, which take place during the fall and winter. At the Health and Leisure Mart, there are demonstrations of many leisure activities such as golf lessons, ice fishing and a Thompson Playhouse Theatre Performance. The Recreation Department also produces a Community Contact List, a booklet which lists the names and telephone numbers of organizations in the City (City Recreation, Parks and Culture Department 2002).

Each February, a Winterfest celebration is held at the Thompson Recreation Center. The event runs over three days and includes performances by popular entertainers, fireworks, a Children's Festival, Manitoba Jigging Finals, a pancake breakfast, sleigh rides and a snow sculpture contest (City Recreation, Parks and Culture Department 2002).

Other Recreational Facilities

Other recreational facilities available to Thompson residents but not operated by the City include:

- Thompson Golf Club - a nine-hole, grass greens golf course complete with clubhouse.
- Mystery Mountain Winter Park, which includes 18 downhill runs, 4 lifts, a halfpipe, biathlon range, snow-tubing facility, ski chalet and equipment rental shop and over 24 kilometres of cross country ski trails. CSIA/CASI Snow School and Canadian Ski Patrol lessons are also available (Mystery Mountain Winter Park 2001).
- A twelve lane 5-pin bowling facility.
- The Burntwood Curling Club.
- Thompson Trailbreakers Inc., a snowmobile club which maintains a network of groomed trails in the surrounding areas.
- Northern Ballet Academy.
- Kelly Waterman School of Dance.
- Better Body Fitness: a weight room and fitness facility (Mystery Net Project 2001).

Other Recreational Programs

Other recreational programs are offered to Thompson residents that are not coordinated or funded through the City of Thompson. The largest of these are Scouts Canada and Girl Guides of Canada, which operate chapters in the community for Thompson's youth (Mystery Net Project 2001).

Thompson's service organizations and fraternal organizations also serve the community. Some of the groups found in Thompson are:

- United Way of Thompson
- Elks

- Kinsmen
- Lions
- Masons/Shriners
- Order of the Royal Purple
- Kinettes
- Knights of Columbus
- Lions International
- Order of the Eastern Star, and
- Rotary International (Mystery Net Project 2001).

In addition, the Ma-Mow-We Tak Friendship Center Northern Circle of Youth, Thompson Boys & Girls Club and the Keewatin Tribal Council all offer children and teen recreational activities free of charge. The United Mennonite Church offers free yoga classes in the evening and the City Centre Mall offers free mallwalking in the mornings and evenings. The Burntwood School also offers access to their Basement Walking Track for a nominal fee. Private Tai Chi, aquasize and dancing lessons are also available (City Recreation, Parks and Culture Department, 2002).

3.1.4.2.7 Policing Services

The Thompson Detachment of the Royal Canadian Mounted Police (R.C.M.P.) is a federal police force. There are thirty-six officers in Thompson and at any time at least seven are on duty. There are also eight support staff. The main R.C.M.P. office in Thompson is open 24 hours a day. There is also a community office in The Plaza (Mystery Net Project 2001).

There are an additional eleven regular rural contingency members stationed at Nelson House, Split Lake, York Landing, Pikwitonei and Thicket Portage. Nelson House is entering into a tripartite agreement and will soon be doing their own policing. This may entail some staff being transferred from Thompson to Nelson House and additional staff being hired (Thompson RCMP, personal communication, 2002).

The staffing levels for the Thompson RCMP detachment have increased over the past 10 to 15 years, but have remained fairly constant over the past eight years. During this time, only one support staff member has been added to the police force. Typically, one staff member is hired for every 500 people in their jurisdiction (Thompson RCMP, personal communication, 2002).

Currently, funding for the Thompson RCMP detachment is split between the City and the Province. The federal government assists the province with some of these payments. At the moment, the municipality pays for 70 per cent of the Department's budget. However, once the population of the City of Thompson exceeds 15,000, the municipality will be responsible for 90 per cent of the budget (Thompson RCMP, personal communication, 2002).

In terms of infrastructure, there are three holding tanks in Thompson, without bunks. There are also eleven cells that can each hold two or more individuals, which were built four years ago (Thompson RCMP, personal communication, 2002).

Over the past ten years, crime statistics for the City of Thompson have remained relatively constant. Typically, there are seasonal variations with crime levels decreasing during the winter months, and increasing during the summer months. A higher rate of crime also occurs at pay-time during each month (Thompson RCMP, personal communication, 2002).

RCMP enforcement duties in Thompson mainly concentrate on dealing with intoxicated individuals. This has been identified as a large problem, and particular area of concern for the Thompson RCMP detachment. Many of these individuals are in need of shelter, and in some cases an addiction centre. The lack of such services and supporting infrastructure has been a recurrent problem for a number of years. The Winnipeg Main Street Project is currently being examined as an example that may provide some insight and guidance (Thompson RCMP, personal communication, 2002).

Unemployment is another enforcement consideration. When there is an increase in unemployment, typically there is also an increased level of crime. Therefore, the RCMP attempt to anticipate and prepare accordingly for trends occurring in the community that might affect crime levels and enforcement needs. Other considerations include changes in income, disasters in other communities (e.g. fire evacuations), changes in weather and cultural issues (Thompson RCMP, personal communication, 2002).

The Thompson RCMP Detachment is very active in community policing. Community policing incorporates “a community approach and seeks to utilize a joint problem solving solution”. The RCMP work in conjunction with other government agencies and the community to identify problems and determine mutually agreeable solutions. In Thompson, the major working groups include:

- **Thompson Advisory Committee:** develops services dealing with youth in the community.
- **Sexual Assault Response Team:** responds to all female sexual assault victims age 18 or older who do not require immediate medical treatment but request a forensic examination within 48 hours of the assault.
- **Child Abuse Committee:** reviews reports and makes decisions as to whether to place the accused on the Central Registry.
- **Futures Committee:** encompasses programs dealing with young and potential mothers in school.
- **Justice Committee:** meets every two months in partnership with the Crown's Office, Judges, Parole Office, Magistrates and the RCMP to discuss and coordinate community policing issues.
- **Citizen Police Academy:** informs the public about the roles and responsibilities of their police service in order to better work with the police to prevent, detect and reduce crime in the community. This includes a Race Relations Committee.

The Thompson Detachment created a Northern Restorative Justice Initiative in 1997. There is now a full-time coordinator for Restorative Justice and the program encompasses a number of community justice streams, including mediation and Aboriginal justice options and Community Justice Forums (Thompson Detachment 2000).

The RCMP are involved with a number of programs designed to prevent crime in Thompson through direct and indirect intervention. The goal of the programs is to target the roots of potential problems, and include the following initiatives:

- **Gang Coordinator:** works in conjunction with local youth groups to combat youth crime regarding issues such as graffiti.
- **Community Storefronts:** located in the Plaza Mall, and focuses on developing and maintaining effective community relations and establishing a strong community presence.
- **Citizens on Patrol:** involves crime watch and crime prevention activities.
- **Auxiliary Constable Program:** involves a total of seven Auxiliary Constable positions to assist the Thompson Detachment.
- **Crime Prevention Committee:** assists the community and law enforcement agencies in crime prevention activities. Other programs also include Child I.D., Block Parents, Community Justice Forums, Neighbourhood Watch and the Community Safety Audit Survey.
- **Northern Regional Advisory Board:** has partnerships with a number of local organizations, and has concentrated on reducing the number of persons charged under the Intoxicated People Detention Act (IPDA) in Thompson.
- **HEATT Grant:** intends to combat thefts and vandalism of vehicles.
- **Bike Patrol:** sponsored by local businesses and includes Auxiliary Constables who perform regular patrols of the community during the summer months.
- **Allegory Youth Centre:** created and requested the RCMP to sit on the executive committee to assist with fund-raising and address security issues.
- **Critical Incident Stress Management Team:** acts in conjunction with Fire and Ambulance services.
- **Snowman Provincial Organization:** conducts safety lectures and monitors snowmobiling as part of Citizens on Patrol.

In addition, the Thompson RCMP work together with Mothers Against Drunk Driving (MADD), the Thompson Crisis Centre, Parents and Tots, the Cottage Owners Association, Paint Lake Search and Rescue, the Seniors Committee, Chambers of Commerce and local schools (Thompson Detachment 2000).

RCMP staff also participate in a number of community events, including: a ski trip to Mystery Mountain for school children, a Ride Along Program, Addictions Awareness Week, Drug Awareness, RCMP Run for Cancer, Law Enforcement Torch Run, RCMP Annual Hockey Tournament, Crime Stoppers Meetings, RCMP Golf Tournament, Police Week Contest and Bike Rodeos (Thompson Detachment 2000).

3.1.4.2.8 Emergency Services

Emergency Services for the City of Thompson are provided by a combination Fire/Ambulance Department which has been in existence since 1959 and currently consists of 20 full-time and 19 auxiliary members (Mystery Net Project 2001).

Fire

The Thompson Fire Department has a total of 39 members: one Chief, one Deputy Chief, twenty full-time firefighters trained in both Emergency Medical Services (EMS) and fire services, and nineteen auxiliary firefighters that work in the community and are on-call. Auxiliary staff are trained in-house, paid once a year and do not have the same level of training as the full-time staff (Thompson Fire Department, personal communication, 2002).

Firefighters are on duty 24-hours a day, seven days a week throughout the year. There are four platoons of four individuals each headed by a Lieutenant. These platoons work a schedule of four days on (which consist of two ten-hour days and two fourteen-hour nights) followed by two days off (Manitoba Intergovernmental Affairs 2000). In the next five to seven years, assuming there is a need, the Department would like to increase the platoon size to six members (Thompson Fire Department, personal communication, 2002).

The Fire Department receives, evaluates and dispatches all of its own calls and deals with all incidents that fall outside R.C.M.P. jurisdiction. This includes handling any City-related business after normal working hours (i.e. 5 p.m. to 9 a.m.). The Department responds to calls up to the Nelson House Junction and as far south as Pisew Falls. They are not the primary response for Nelson House (Thompson Fire Department, personal communication, 2002). The Department also provides 24-hour alarm services for 64 premises within the City at a cost of \$15.00 per month (Manitoba Intergovernmental Affairs 2000).

Table 3.41 indicates that total call volumes for the Department have increased over the past ten years, but fire-related calls have declined.

Table 3.41
Thompson Emergency Services Call Volumes: 1990 and 2000

Type of Call	Call Volumes		
	1990	2000	Per cent Increase
Fire-related	387	350	-10
Medical	1,458	2,109	45
Special Incidents	N/A	55	N/A

Sources:

1. Mystery Net Project 2001.
2. Thompson Fire and Emergency Services 2001.

The Thompson Fire Department has been keeping track of Special Incident emergencies (those that do not qualify as fire or ambulance) since 1996. The number of special incidents has varied over this time between a low of 27 in 2001, and a high of 60 in 1999 (Thompson Fire and Emergency Services 2001).

In keeping with the increase in call volumes, additional equipment has been purchased and added to the Department's inventory. For the purposes of fire protection, the City has a mains and hydrant system with the ability to provide additional water pressure on request through the implementation of fire pumps controlled by INCO personnel. Fire apparatus available to respond include:

- A 1987 Ford 1,050 gallons per minute pumper
- A 1974 100 foot aerial ladder truck with a 1,050 gallons per minute pump
- Two suburbans (one is to be traded for a truck in the near future)
- A snowmobile with trailer, and
- A zodiac

(Thompson Fire Department, personal communication, 2002).

The Department is currently housed in the Thompson City Hall, but there is limited space available for future staff expansions. As such, there are plans to renovate and improve some of their existing space (Thompson Fire Department, personal communication, 2002).

Medical (Ambulance)

Medical responses are dealt with by an on-duty staff trained to Emergency Medical Assistance 1 (EMA1) standards with additional skills like intravenous (IV) maintenance, tubes maintenance and semi-automatic defibrillation (SAED) certification. The Department has two Commander III type modular ambulances, as well as the use of the Chief and Deputy Chief's Suburbans, both of which can be converted for stretcher transport. Additional fire equipment available to respond to medical emergencies includes a Walter Cr500 Foam Truck (Medium), a Jaws of Life and two breathing apparatus with two extra tanks. The secondary Emergency Response Medical Services (ERMS) is provided by the City of Thompson Fire/Ambulance Department (Mystery Net Project 2001).

Emergency services are available 24-hours a day at the Thompson Hospital. If patients do not understand or speak English, translation services can be arranged through Telephone Interpreter Services (Manitoba Intergovernmental Affairs 2000).

The Northern Patient Transportation Program (NPTP) subsidizes emergency and qualifying non-emergency medical transportation costs. Patients must pay the first \$50 of any non-emergency transportation. Patients will not have to pay the \$50 transportation charge if they need extended, repeat treatment. Doctors will arrange this service for their patients (Manitoba Intergovernmental Affairs 2000).

The number of emergency ambulance calls has increased significantly over the past ten years. There were 1,458 ambulance calls in 1990 and 2,186 calls in 2001 (Thompson Fire and Emergency Services 2001). Increased number of ambulance transfers between the hospital and the airport, the aging population of Thompson and the need for an increased reliance on Thompson's medical services by outlying communities may contribute to the increase in ambulance calls (Thompson Fire Department, personal communication, 2002).

Additional Emergency Services

The City of Thompson responds to other types of emergencies including water breaks, gas leaks and animal control. Emergency responses related to electrical problems are provided by the Manitoba Hydro office in Thompson (Manitoba Intergovernmental Affairs 2000).

3.1.4.3 Municipal Finance

Municipal finance information was taken from the annual Municipalities of the Province of Manitoba Statistical Information reports. This information is compiled and produced annually by Manitoba Intergovernmental Affairs, Municipal Finance and Advisory Services. Data were used from the select years of 1986, 1991 and 1996 in order to correlate with Census of Canada data for these same years. Data from 1999 were also used, as this was the most recently published municipal finance information available. Additional municipal finance information for 2000 and 2001 was collected from the City of Thompson's Treasurer, Roger Hardman.

3.1.4.3.1 Municipal Revenue

Table 3.42 below indicates the General Operating Fund Revenues at year-end for each of the years 1986, 1991, 1996, 1999, 2000 and 2001 by revenue source. Table 3.42 below also indicates that revenues generally have been increasing over the years 1986, 1991, 1996 and 1999. Grants-In-Lieu of Taxes were the primary contributor to municipal revenues, accounting for 33 per cent of total revenues in 1999. Beginning in 2000, INCO has begun reducing its payments to Thompson. (Manitoba Municipal Affairs 1986, Manitoba Rural Development 1991, 1996, Manitoba Intergovernmental Affairs 1999). INCO reduced its Grants-In-Lieu of Taxes by approximately an additional \$500,000 over each of the years 2000, 2001 and 2002. Currently, INCO's Grants-In-Lieu of Taxes payments are being negotiated for the year 2005 and onward, and will remain fixed at the 2002 rate for the next two years (City of Thompson, personal communication, 2002). The loss of INCO payments will have to be made up by other revenue sources, in particular municipal taxes.

A slight decrease in municipal revenues was noted between 1999 and 2000, before increasing again in 2001 partially to offset the reduced Grants-In-Lieu of Taxes revenues. Since 1986, school taxes in Thompson have increased by 272 per cent and the City now has the highest school taxes in the Province (Manitoba Municipal Affairs 1986, Manitoba Rural Development 1991, 1996, Manitoba Intergovernmental Affairs 1999, City of Thompson, personal communication, 2002).

Table 3.42
Thompson's Municipal Revenue: 1986, 1991, 1996, 1999, 2000 and 2001

Revenue Source	1986	1991	1996	1999	2000	2001
School Tax	2,711,321	4,567,950	5,757,456	7,022,465	7,159,559	7,386,530
Municipal Tax	2,787,389	3,035,077	3,308,860	3,876,976	4,315,217	4,614,825
Grants-In-Lieu of Taxes	6,678,418	7,738,100	8,090,124	7,993,175	7,554,964	7,036,130
Conditional & Uncond. Transfers	1,229,700	1,474,421	2,462,409	2,650,637	2,727,230	2,887,414
Other	1,491,639	2,519,196	2,780,570	2,364,000	1,997,660	2,416,203
Total	14,898,467	19,334,744	22,399,419	23,907,253	23,754,630	24,341,102

Sources:

1. Manitoba Municipal Affairs 1986.
2. Manitoba Rural Development 1991, 1996.
3. Manitoba Intergovernmental Affairs 1999.
4. City of Thompson, personal communication, 2000.

Note:

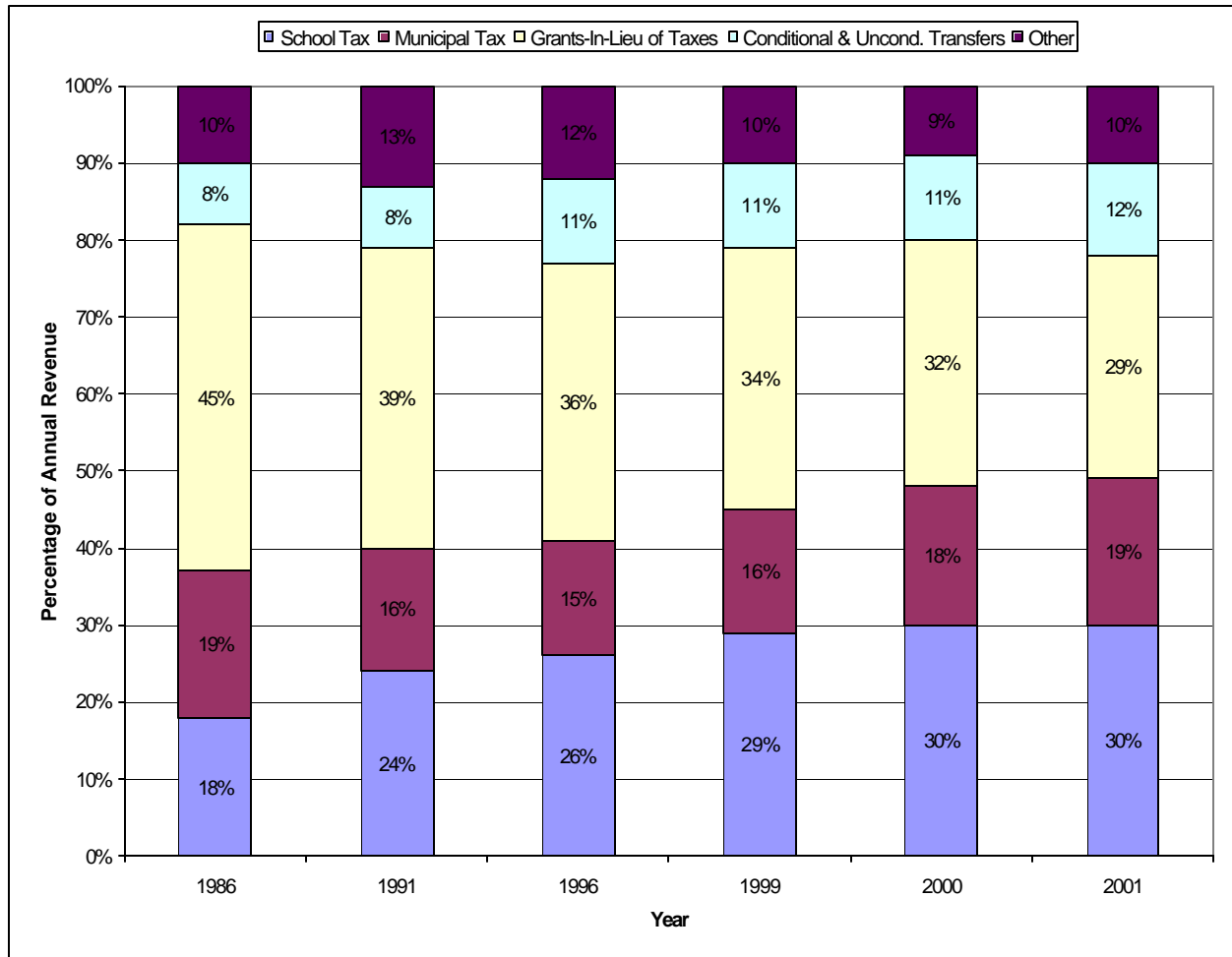
1. The "Other" category used for the Revenue Source includes the following components:
 - Business Tax
 - Taxes Added
 - Licenses, Permits & Parking Meters
 - Fines
 - Sales of Services
 - Sale of Goods
 - Rents
 - Return on Investments
 - Tax Penalties
 - Miscellaneous, and
 - Transfer from Own Funds.

•
Figure 3.22 indicates that for each of the revenue sources noted in Table 3.44 above, there were important variations in the relative annual proportion each contributed to total revenue between 1986 and 2001. The most notable changes were:

- The significant change in Grants-In-Lieu of Taxes payments, which contributed nearly half (45 per cent) of the general operating fund revenues in 1986, and approximately a third (29 per cent) of total revenues in 2001.
- The relative proportion of total revenues contributed by School Taxes, which increased by 12 per cent from 1986 to 2001 (Manitoba Municipal Affairs 1986, Manitoba Rural Development 1991, 1996, Manitoba Intergovernmental Affairs 1999, City of Thompson, personal communication, 2002).

In light of the already very high School Taxes and rising pressure on the Municipal Tax base to offset declining Grants-In-Lieu of Taxes, the City's ability to raise local taxes will be hampered in the next five to ten years.

Figure 3.22
Thompson General Operating Fund Revenues for the years 1986, 1991, 1996, 1999, 2000
and 2001



Sources:

1. Manitoba Municipal Affairs 1986
2. Manitoba Rural Development 1991, 1996
3. Manitoba Intergovernmental Affairs 1999
4. City of Thompson, personal communication, 2002

3.1.4.3.2 Municipal Expenditures

The following figures were taken from the General Operating Fund Expenditure at year-end for the years 1986, 1991, 1996, 1999, 2000 and 2001. [Table 3.43](#) below indicates that Education was the primary municipal expenditure over the period from 1986 to 2000, accounting for 36 to 40 per cent of annual City spending. The next largest expenditure was Protection, although it equated to less than half the amount spent on Education (Manitoba Municipal Affairs 1986, Manitoba Rural Development 1991, 1996, Manitoba Intergovernmental Affairs 1999, City of Thompson, personal communication, 2002).

Table 3.43
Thompson Municipal Expenditures: 1986, 1991, 1996, 1999, 2000 and 2001

Expenditure Source	1986	1991	1996	1999	2000	2001
General Government	1,034,175	1,604,081	1,674,473	1,724,501	1,765,304	1,780,303
Protection	2,395,536	3,460,237	4,163,907	4,439,928	4,433,029	4,758,657
Transportation	1,635,011	2,392,388	2,355,077	2,250,348	2,056,580	2,475,446
Recreational & Cultural	1,617,172	2,195,103	2,393,173	2,468,352	2,072,320	2,097,749
Education	5,387,460	6,934,381	8,289,976	9,434,023	9,502,506	9,585,033
Fiscal	1,602,987	1,968,014	2,218,284	2,661,569	2,319,125	2,616,259
Other	782,431	1,009,229	1,266,644	848,470	1,550,010	1,027,655
Total	14,454,772	19,563,433	22,361,534	23,827,191	23,698,874	24,341,102

Sources:

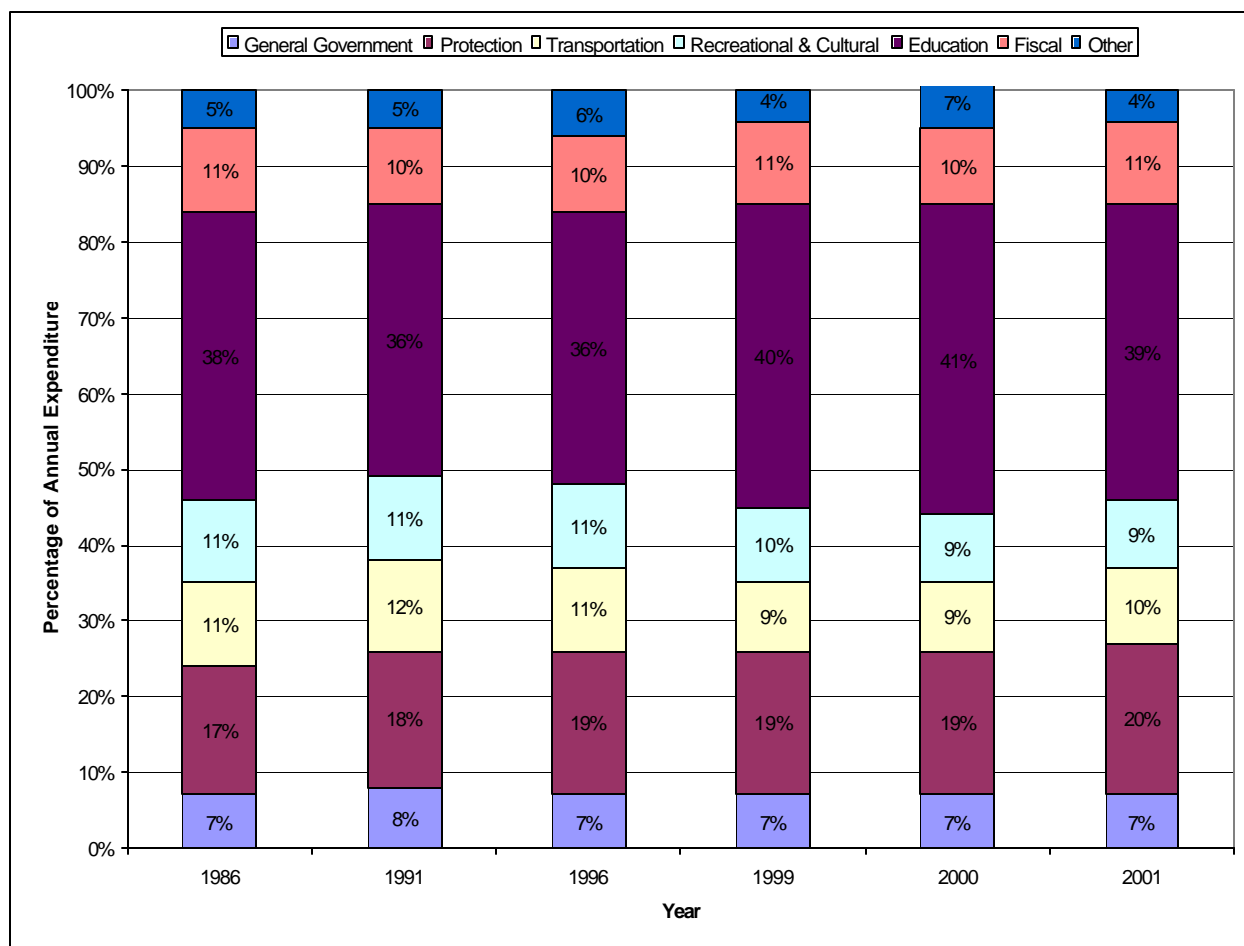
1. Manitoba Municipal Affairs 1986.
2. Manitoba Rural Development 1991, 1996.
3. Manitoba Intergovernmental Affairs 1999.
4. City of Thompson, personal communication, 2002.

Note:

1. The "Other" category used for the Revenue Source includes the following components:
 - Environmental Health
 - Public Health
 - Social Welfare
 - Environmental Planning, and
 - Economic Development.

Figure 3.23 indicates that the relative share of expenditures was quite stable from 1986 to 2001, with municipal expenditures, no more than a five per cent change in share in any of the expenditure categories (Manitoba Municipal Affairs 1986, Manitoba Rural Development 1991, 1996, Manitoba Intergovernmental Affairs 1999, City of Thompson, personal communication, 2002).

Figure 3.23
Municipal Expenditures for the City of Thompson: 1986, 1991, 1996, 1999, 2000 and 2001



Sources:

1. Manitoba Municipal Affairs 1986.
2. Manitoba Rural Development 1991, 1996.
3. Manitoba Intergovernmental Affairs 1999.
4. City of Thompson, personal communication, 2002.

3.1.4.3.3 Water and Sewer Utility Operating Fund

As shown in [Table 3.44](#), revenues and expenditures from the Water and Sewer Utility more than doubled over the period between 1986 and 1991 and have remained reasonably stable since 1991 (Manitoba Municipal Affairs 1986, Manitoba Rural Development 1991, 1996, Manitoba Intergovernmental Affairs 1999, City of Thompson, personal communication, 2002).

Table 3.44
Thomson Water and Sewer Operating Fund: 1986, 1991, 1996, 1999, 2000 and 2001

Water and Sewer Operating Fund	1986	1991	1996	1999	2000	2001
Revenues	467,153	1,077,856	1,041,211	1,169,173	1,221,747	1,142,518
Expenditures	467,153	1,077,856	1,041,211	1,169,173	1,221,747	1,142,518

Sources:

1. Manitoba Municipal Affairs 1986.
2. Manitoba Rural Development 1991, 1996.
3. Manitoba Intergovernmental Affairs 1999.
4. City of Thompson, personal communication, 2002.

Sources of expenditure are shown in Table 3.45. As of 1996, debt changes had become a significant expenditure.

Table 3.45
Thompson Water and Sewer Utility Expenditures: 1986, 1991, 1996, 1999, 2000 and 2001

Expenditure Source	1986	1991	1996	1999	2000	2001
Water Supply	118,178 (26%)	162,891 (15%)	169,365 (16%)	177,168 (15%)	121,722 (10%)	234,437 (21%)
Sewage Disposal	328,428 (70%)	457,141 (42%)	439,596 (42%)	548,686 (47%)	589,212 (48%)	543,470 (48%)
Transfer to Own Funds	20,493 (4%)	457,824 (43%)	47,806 (5%)	117,801 (10%)	185,295 (15%)	39,093 (3%)
Debt Charges	0	0	384,444 (37%)	325,518 (28%)	325,518 (27%)	325,518 (28%)
Total Expenditure	467,153	1,077,856	1,041,211	1,169,173	1,221,747	1,142,518

Sources:

1. Manitoba Municipal Affairs 1986.
2. Manitoba Rural Development 1991, 1996.
3. Manitoba Intergovernmental Affairs 1999.
4. City of Thompson, personal communication, 2002.

3.1.4.3.4 Analysis of Capital Debt

Thompson's Capital Debt increased significantly between 1996 and 1999 and then remained stable to 2001 (Table 3.46). In addition, the share of various sources to the total Capital Debt remained relatively stable from 1999 to 2001 (Manitoba Municipal Affairs 1986, Manitoba Rural Development 1991, 1996, Manitoba Intergovernmental Affairs 1999, City of Thompson, personal communication, 2002).

Table 3.46
Thompson's Capital Debt: 1986, 1991, 1996, 1999, 2000 and 2001

Capital Debt Source	1986	1991	1996	1999	2000	2001
Administration	0	0	0	0	0	0
Protection	0	0	0	0	0	0
Transportation	0	0	0	0	0	0
Water & Sewer	0	0	1,947,751 (100%)	1,458,141 (21%)	1,264,559 (20%)	1,053,462 (17%)
Social Services	0	0	0	0	0	0
Recreational & Cultural	1,023,157 (74%)	209,249 (100%)	0	851,998 (13%)	809,005 (13%)	763,111 (13%)
Consolidated	0	0	0	0	0	0
Other	360,405 (26%)	0	0	4,502,122 (66%)	4,367,355 (67%)	4,223,483 (70%)
Total	1,383,562	209,249	1,947,751	6,812,261	6,440,919	6,040,056

Sources:

1. Manitoba Municipal Affairs 1986.
2. Manitoba Rural Development 1991, 1996.
3. Manitoba Intergovernmental Affairs 1999.
4. City of Thompson, personal communication, 2002.

The building of the Norplex Pool was the greatest source of Capital Debt during this period.

The City of Thompson currently has three debentures and they break down as follows:

- repairs to the Norplex pool roof
- installation of a Utilidor system in the Burntwood Trailer Court (water and sewer related),
and
- replacement of the Public Safety Building (RCMP Building).

Prior to these projects, the City of Thompson had no major Capital Debt (City of Thompson, personal communication, 2002).

3.1.5 Personal, Family and Community Life

3.1.5.1 Navigation Safety and Access

3.1.5.1.1 Traffic Safety & Access

Internal Road System

As discussed in Section 3.1.4.1, the internal road system in Thompson was developed in a cloverleaf design on a central circle – Thompson Drive North and South (see Figure 3.21).

Through the city, PR 391 becomes a four-lane divided street, known as Mystery Lake Road. Along Mystery Lake Road (from south to north) there are four signalized intersections at Burntwood Road, Thompson Drive South, Station Road and Thompson Drive North. Accident statistics, obtained from MTGS, are shown for each of these intersections in Table 3.47 below (ND Lea 2002).

Table 3.47
Accidents within Thompson: 1995 to 2000

Intersection	Average # of Accidents per year	Accidents per million Vehicles Entering Intersection
PR 391/Burntwood Road	1	0.36
PR 391/ Thompson Drive S.	2	0.48
PR 391/Station Road	6	1.07
PR 391/Thompson Drive N.	3	0.57

Source: ND LEA Engineers & Planners Inc. 2002

External Road System

Table 3.48 presents the traffic volume on PTH 6 by vehicle classification for the weeks January 15 to 21, 2000 and July 15 to 21, 2000 (winter and summer averages). The Permanent Counting Station 82, located on PTH 6 about one kilometre south of junction PR 375, was used to determine these classifications. In Manitoba, the Federal Highways Administration (FHWA) Vehicle Classification System is used.

Table 3.48
PTH 6 Winter and Summer Traffic Volumes by Vehicle Classifications: 2000

Classification	Description	Winter		Summer	
		Avg. Daily Volume	%	Avg. Daily Volume	%
1	Motorcycles	0	0	2	0.2
2	Passenger Cars	174	35.2	447	51.4
3	Other 2-axle, 4-tire, single-unit	185	37.4	326	37.5
4	Buses	6	1.2	7	0.8
5	2-axle, six-tire, single-unit trucks	5	1.0	9	1.0
6	3-axle, single-unit trucks	9	1.8	6	0.7
7	4-or-more-axle, single-unit trucks	0	0	1	0.1
8	4-or-less-axle, single trailer trucks	2	0.4	11	1.3
9	5-axle, single trailer trucks	31	6.3	36	4.1
10	6-or-more-axle, single trailer trucks	8	1.6	11	1.3
11	5-or-less, multi-trailer trucks	0	0	0	0
12	6-axle, multi-trailer trucks	0	0	0	0
13	7-or-more axle, multi-trailer trucks	73	14.8	13	1.5
14	Other	0	0	0	0
TOTAL		494	99.7	869	99.9

Sources:

1. Table taken from ND Lea 2002.
2. Data obtained from the University of Manitoba Transport Information Group.

Note:

1. Percentage totals may not add up to 100.0% due to rounding of the numbers.

The table shows that three per cent of the total traffic in the winter and summer seasons on PTH 6 is comprised of single-unit trucks or single trailer trucks with four or less axles (Classifications 5 to 8). 23 per cent of the total traffic in the winter, and 7 per cent in the summer, is comprised of larger trucks with four or more axles (Classifications 9 to 13). Classification 13 trucks, those with seven or more axles (multi-trailers), are more common in the winter than summer. The increase in classification 13 truck activity on PTH 6 during the winter season is linked to the use of the winter road system for supply deliveries to remote Northern Manitoba communities (ND Lea 2002).

Table 3.49 outlines use of PR 391 by vehicle classification. The table highlights the distribution of vehicle types on the road as calculated over a two-day period in June 1997.

Table 3.49
PR 391 Traffic Volumes by Vehicle Classifications: June 16-17, 1997

Classification	Description	14-Hour Avg. Volume	%
1	Motorcycles	0	0
2	Passenger Cars	80	25.6
3	Other 2-axle, 4-tire, single-unit	182	58.1
4	Buses	2	0.6
5	2-axle, six-tire, single-unit trucks	7	2.2
6	3-axle, single-unit trucks	4	1.3
7	4-or-more-axle, single-unit trucks	0	0
8	4-or-less-axle, single trailer trucks	0	0
9	5-axle, single trailer trucks	20	6.4
10	6-or-more-axle, single trailer trucks	7	2.2
11	5-or-less, multi-trailer trucks	0	0
12	6-axle, multi-trailer trucks	0	0
13	7-or-more axle, multi-trailer trucks	1	0.3
14	Other	10	3.2
TOTAL		313	99.9

Source:

1. The total counts included in this table were completed by Manitoba Transport and Government Services on June 16 and 17, 1997. Data obtained from UMTIG. Table borrowed from ND Lea 2002.

Notes:

1. The count occurred at the intersection of PR 391 and the access road to Nelson House. Given that there are no other intersections along this stretch of road, it is assumed that the classification counts can be applied to the entire stretch of PR 391 east of Thompson.
2. Percentage total may not add up to 100.0% due to rounding of the numbers.

As shown above, single-unit trucks and single trailer trucks with four or less axles (Classifications 5 to 8) represent 3.5 per cent of the total traffic on PR 391. Larger trucks with four or more axles (Classifications 9 to 13) represent 9 per cent of the total traffic (ND Lea 2002). Similar to PTH 6, the majority of traffic on PR 391 is passenger cars (Classification 2) and other 2-axle, 4-tire, single-unit vehicles (Classification 3).

Table 3.50 highlights traffic volumes and accident rates for both PTH 6 and PR 391 for the year 2000. Data included in this table were obtained from the University of Manitoba Transport Information Group (UMTIG). In the table, PTH 6 is divided into four sections, which correspond to traffic junctions. These sections include:

Section 1:	PR 236 to PTH 68 (118 km)
Section 2:	PTH 68 to PTH 60 (258 km)
Section 3:	PTH 60 to PTH 39 (210 km)
Section 4:	PTH 39 to Thompson (153 km)

Table 3.50
PTH 6 and PR 391 Traffic Volumes and Accidents: 2000

Highway	Section	Average 2000 AADT ¹	AADTT ² (Truck %)	ASDT ³	# of Accidents (2000)	Accidents / Million vehicle-km
PTH 6	1	2,290	220 (9.6%)	2,630	36	0.36
	2	1,035	140 (13.5%)	1,190	33	0.34
	3	410	90 (21.8%)	485	10	0.32
	4	1,025	100 (10.0%)	1,240	24	0.42
PR 391 (excl. Thompson)	-	355	25 (7.0%)	435	8	0.89

Source:

1. Data obtained from the University of Manitoba Transport Information Group (Literal citing from the draft ND Lea Traffic Report 2002).

Notes:

1. AADT: Annual Average Daily Traffic. This statistic provides an indication of the average usage of a road at a particular traffic station. The AADT estimates the typical daily traffic on a particular road segment for all days of the week (Sunday to Saturday) over a one-year period.
2. AADTT = Average Annual Daily Truck Traffic (trucks/day).
3. ASDT: Average Summer Daily Traffic (%). The ASDT represents an estimate of typical daily traffic on a road segment for all days of the week (Sunday to Saturday) over the summer season (in Manitoba the summer season spans from May 1 to September 30).

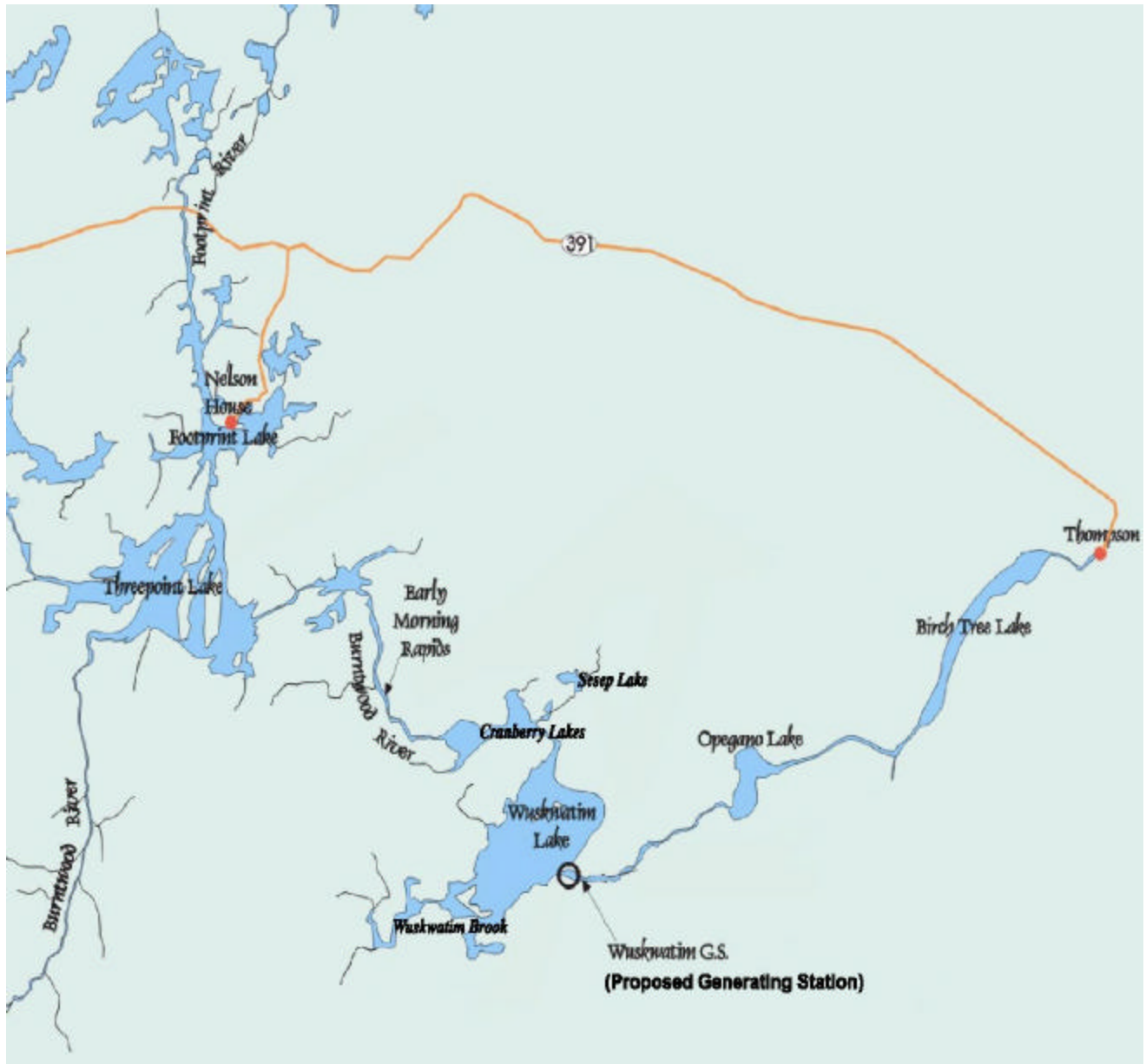
From the table above, it should be noted that Section 3 of PTH 6, located between PTH 60 and PTH 39, experiences far less traffic than other stretches of the highway. Lower rates of traffic in this section are related to the presence of only one town and the absence of any major junctions.

The weighted average accident rate, for the portions of PTH 6 included in the table above, was calculated at 0.35 accidents per million vehicle-kilometres of travel (MVK). The accident rate for the included portion of PR 391 was calculated slightly higher at 0.89 accidents per MVK of travel. An accident rate exceeding 1.5 accidents per MVK is considered to warrant further review by MTGS (ND Lea 2002).

3.1.5.1.2 Water-Based Navigation and Safety

Water-based navigation safety and access is of particular concern in those areas west and southwest of Thompson. Information on open-water and ice conditions for the water bodies between Early Morning Rapids and Thompson has been collected. This section of the Burntwood River system has been chosen because it may be affected by the proposed Wuskwatim Generating Station at Taskinigup Falls (see [Figure 3.24](#)).

Figure 3.24
Location of the Proposed Wuskwatim Generating Station



Winter ice conditions have important implications for the ability of Thompson residents to travel and access areas that cannot otherwise be accessed without crossing the Burntwood River. It is important to note that winter ice conditions vary by location and are constantly changing throughout the winter season.

Navigation Downstream of Wuskwatim Lake

Open Water Use

From Thompson to Wuskwatim Lake, there is very little or no water-based travel activity on the Burntwood River system during any part of the year. Generally, Thompson residents will use Birchtree Lake and sections of the Burntwood River as far as Lower Kepuche Falls for fishing, boating and other recreational purposes. Beyond Kepuche Falls, the route is considered to be too dangerous near Wuskwatim Falls and Taskinigup Falls. No facilities exist to assist with portaging across Wuskwatim or Taskinigup Falls, and consequently there is no easy way to portage around the Falls. The conditions of these two areas were made worse by the Churchill River Diversion (CRD) (NCN Resource Programs, personal communication, 2002). In addition, there are few attractions downstream from Wuskwatim Lake that draw people or justify attempting to make the very dangerous trip. This year there was only one person, a tourist on a canoe trip, believed to have passed from Wuskwatim Lake down past the Falls (North/South Consultants, personal communication, 2001).

Winter Use

During the winter, Thompson residents rarely use the section of waterbody between Wuskwatim Lake and Thompson because of dangerous ice conditions. There is some use of Birchtree Lake for recreational snowmobiling and ice fishing. There are, however, no designated snowmobile trails to access these areas. Some residents will follow the existing transmission line right-of-way, which proceeds northwest from the City and crosses the Burntwood River just north of Birchtree Lake (Interviews with Thompson residents, personal communication, 2002).

Navigation Upstream of Wuskwatim Lake

Open Water Use

Few Thompson residents use the Burntwood River to travel from Wuskwatim Lake to Early Morning Rapids. This area is very difficult to access and can only be accessed by Nelson House residents travelling downstream from Nelson House (Interviews with Thompson residents, personal communication, 2002). Some Thompson residents use boats to travel from Nelson House to Wuskwatim Lake to go moose hunting in the spring; however, this practice is very limited and is primarily undertaken by Nelson House residents (North/South Consultants, personal communication, 2001).

The trip upstream from Wuskwatim Lake to Early Morning Rapids is very dangerous and difficult. Gods Rapids, Caribou Rapids and Early Morning Rapids all have to be portaged. Early Morning Rapids are the most treacherous. Manitoba Hydro has set up a track system with all-terrain vehicles (ATVs) and boat trailers to pull boats across the portage areas of these falls, and residents from Nelson House maintain these facilities. Even with this assistance, however, very few people travel from Thompson to Early Morning Rapids (North/South Consultants, personal communication, 2001).

Winter Use

In general, residents of Thompson do not use the waterways west of Thompson very much during the winter as there is limited snowmobiling and ice fishing in this region. The section of the Burntwood River at Early Morning Rapids is avoided by Thompson residents in the winter because ice conditions in this area are very dangerous (Interviews with Thompson residents, personal communication, 2002). There

are no designated snowmobile trails for Thompson residents that access the waterways between Early Morning Rapids and Wuskwatim Lake (Nicholls 1995).

Very few Thompson residents use Wuskwatim Lake during the winter, although the ice conditions are considered quite stable. Wuskwatim Lake experiences solid lake ice and a small increase in water level during winter (Manitoba Hydro 2001).

3.1.5.1.3 Outdoor Recreation in Thompson and Vicinity

Outdoor recreationists in the Thompson area have access to a number of resources both within and near the City. Lakes in the region are known for their walleye, northern pike and trout fishing. There are also numerous snowmobiling, hunting, camping and hiking opportunities in the natural areas surrounding the community (Mystery Net Project 2001).

The importance of outdoor recreation to Thompson residents is noted in the 2001 City of Thompson Development Plan, which recognizes the need to enhance opportunities for recreation within and adjacent to the Planning District. In particular, Paint Lake Provincial Park is mentioned as a popular outdoor recreation site for Thompson residents. The Burntwood River is also noted as an important community recreation resource. The Plan indicates the need for these lands to be kept in the public domain and any development carefully regulated. Boating, skiing, recreational floatplane flying, picnicking and passive recreation are recognized as routine and desirable uses of the waterway under the Development Plan (Thompson Community Planning Services Office 2001).

Outdoor Recreation by Location

Within the City

McLean Park is a popular outdoor recreation venue within Thompson. The park is located close to City Hall, and lies on the banks of the Burntwood River. The park is home to an outdoor theater stage that is used during the summer months by local community theater groups (Manitoba Intergovernmental Affairs 2001).

Another popular outdoor recreation option is the fifteen-kilometre Thompson Millennium Trail. The trail can be used for walking, running or biking and passes by a number of popular attractions, including the Thompson Zoo, sections of Boreal Forest, the Miles Hart Bridge, Maclean Park, the Bailey Bridge, INCO's aqueduct, Rotary Outlook, granite cliffs, the Burntwood River and the Heritage North Museum.

The 2001 Development Plan expresses a commitment to creating additional outdoor recreational areas in Thompson. The Plan indicates that, as the City develops further residential areas, funds are to be identified to develop passive (recreational) parks as part of these new neighborhoods (Thompson Community Planning Services Office 2001).

South of Thompson

Areas south of Thompson are the most popular outdoor recreation sites for Thompson residents. The primary attraction is Paint Lake Provincial Park, which is located 29 kilometres south on PTH 6 at the junction with PR 375. Paint Lake is part of the Grass River System, and enjoys widespread use by

Thompson residents throughout the year (Interviews with Thompson residents, personal communication, 2002). Facilities provided in the park include:

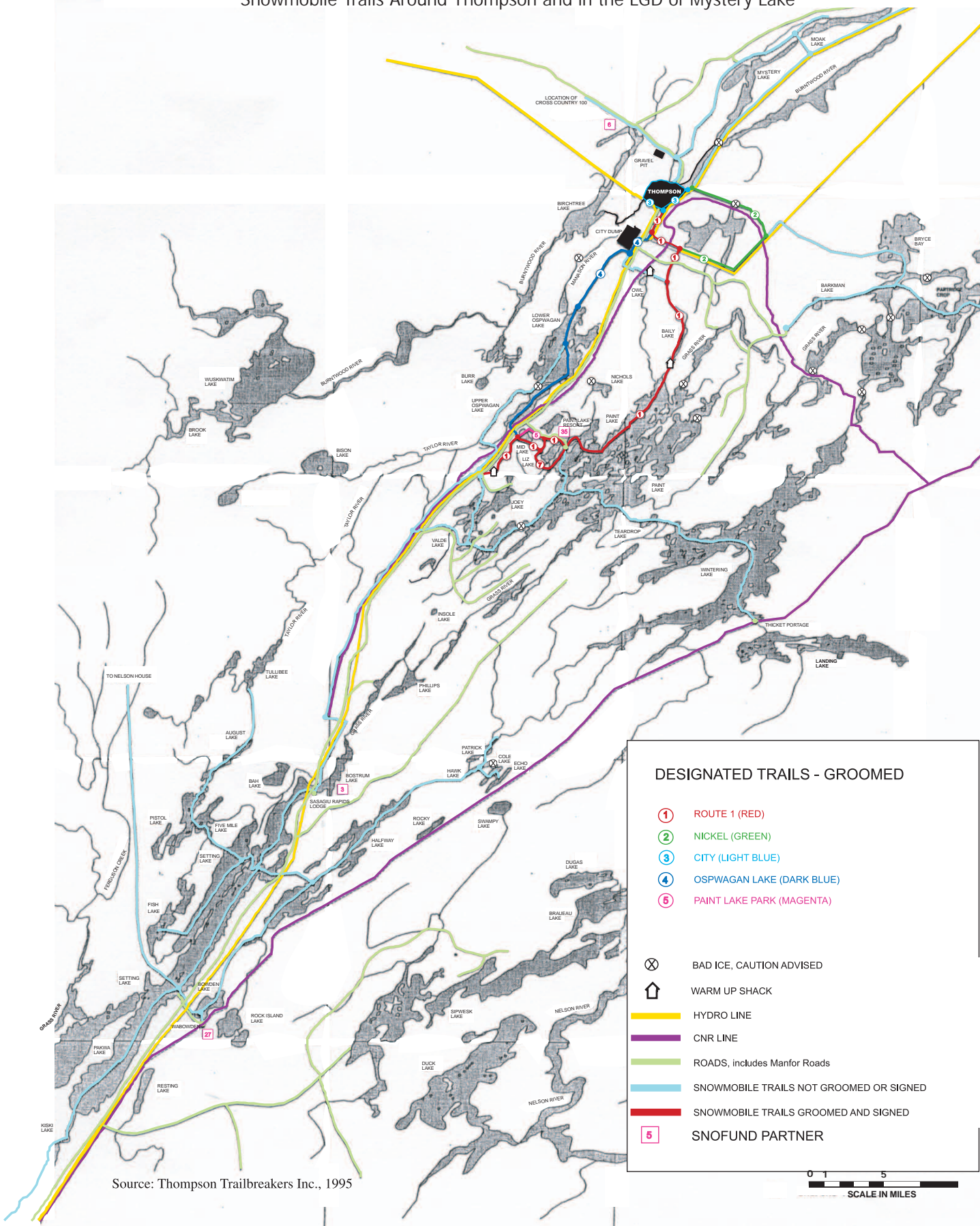
- a restaurant and marina
- a beach
- an ice skating area
- a jam pail curling area
- groomed snowmobile trails
- fitness trails
- a picnic area and campground
- fishing spots
- a toboggan slide
- cross-country ski trails, and
- a warm up cabin for winter activities (Mystery Net Project 2001).

Pisew Falls, the third largest falls system in the province, is located further to the south along PTH 6 between Thompson and Wabowden. A five-minute walk along a board-walk provides access to the Falls. Plans are being made to create a six kilometre hiking trail, which will link Pisew Falls with Kwasitchewan Falls, the second highest falls in Manitoba (Travel Manitoba 2000).

The Thompson Trailblazers Inc., a local snowmobiling club, maintain a groomed and signed snowmobile trail south of the City (see [Figure 3.25](#)). The trail exits at the south end of Thompson and heads due south to Baily Lake (Nicholls 1995).

There is also a vast network of roads, including Manfor Roads, to the south of Thompson. These roads provide access to a number of lakes, rivers and resource areas that are used by Thompson residents. In addition, the Paint Lake Resort, Sasagiu Rapids Lodge and Wabowden can all be reached using these roads (Nicholls 1995).

Figure 3.26
Snowmobile Trails Around Thompson and in the LGD of Mystery Lake



East of Thompson

Areas to the east of Thompson are also heavily used for recreational purposes by Thompson residents. These areas include Ore Creek and parts of the Burntwood River system. The Canadian National Railway line runs to the southeast of Thompson and opens up access to these areas. The rail line corridor is used for snowmobiling in the winter and all-terrain vehicle use in the summer (Interviews with Thompson residents, personal communication, 2002).

The Thompson Trailblazers Inc. have a groomed snowmobile trail east of the City. It is called the “Nickel Trail”, and runs in an approximate twenty-mile loop on the east side of the City. There is also an additional trail that is not groomed or signed that branches from the far east side of the Nickel Trail (see [Figure 3.25](#)).

West of Thompson

In the areas west and southwest of Thompson, there is a fair amount of snowmobiling in the winter and moose hunting in the fall by Thompson residents. Much of this occurs in the Nelson House Resource Management Area (RMA). Recreational snowmobiling occurs along the WL 43 transmission line corridor, which runs along PR 391 towards Leaf Rapids. The turn-around point is located near Mile 20 on the highway (Interviews with Thompson residents, personal communication, 2001).

Areas of Birchtree Lake and the adjacent Burntwood River are also considered good for snowmobiling. The annual CAN-AM PRO Snowmobile Championship is held along the Churchill River Diversion (CRD) backwater that enters the Burntwood River. It is located near the second causeway on PR 391 just past the Split Lake turnoff. The event has been held for the past five years, hosts around 20 competitors from across Canada and the United States and draws crowds of 500 to 600 people (Interviews with Thompson residents, personal communication, 2001).

Areas to the west along PR 391 are also used quite heavily by Americans, residents of Thompson and others interested in fishing and out-camps. Many of these activities occur on Notigi and Rat Lake. Very little recreational activity occurs on Opegano Lake, as it is too difficult to access from Jackpine Falls. The Manasan Falls and Manasan River, as well as the Portage River, are also used to a lesser degree for canoeing. To access these areas a boat has to be taken from the causeway, where there is a Hydro boat launch. In general, Birchtree Lake the most popular recreational use area to the west of Thompson (Interviews with Thompson residents, personal communication, 2001).

North of Thompson

For outdoor recreation north of Thompson, McCreedy Campground is the most popular destination. It is situated one mile north of Thompson along PTH 6 near the east shore of the Burntwood River. Features of the campground include:

- 49 camping sites (28 with electrical service)
- Campground office
- Washrooms with showers
- Playground, and
- Day use area for picnics.

The campground season extends from May long weekend to mid-October (N.C.S. Holdings Inc. 2001).

Other areas to the north of Thompson are not used heavily by Thompson residents. There are no cabins or other developments in this area. There are small amounts of berry picking, bear hunting, fishing and snowmobiling in these areas (Interviews with Thompson residents, personal communication, 2002).

There are four cross-country ski trails located north of the City. These trails can be accessed from PR 391 shortly after crossing the Burntwood River while heading north towards the airport. The trails include one, four, five and six kilometre loops that proceed to the west along the shore of the Burntwood River (Recreation, Parks and Culture Department 2000).

The Thompson Trailblazers Inc. have a few trails to the north of Thompson. None of these trails are groomed or signed (see Figure 3.25).

Outdoor Recreation Facilities and Associations

There are several outdoor recreation associations within the vicinity of the City of Thompson. The Thompson Golf Club operates a nine-hole, grass greens golf course complete with clubhouse. During the summer it is very busy and a tee time has to be booked several days in advance (City of Thompson, personal communication, 2002). The Mystery Mountain Winter Park offers 18 downhill runs, 4 lifts, ski chalet and equipment rental shop and over 24 kilometres of cross country ski trails. As mentioned previously, the Thompson Trailblazers Snowmobile club maintains a network of groomed trails in the areas surrounding Thompson. There are also the Thompson Horse Owners Club, Twilight Water Ski Club, Thompson Stock Car Club and Thompson Wildlife Association (Mystery Net Project 2001).

3.1.5.2 Goals and Plans of the Thompson Planning District

3.1.5.2.1 The Thompson Planning District Development Plan (2001)

The creation of development plans in Manitoba is under the jurisdiction of the provincial government's Department of Intergovernmental Affairs. Manitoba Intergovernmental Affairs has nine regional Community Planning Services Offices throughout the province. These offices are responsible for creating and updating local development plans every five years, as stipulated under *The Planning Act* (Manitoba Intergovernmental Affairs, personal communication, 2002).

Throughout its history, the City of Thompson has had three development plans. The current Development Plan was adopted in 2001, and contains only minor revisions from the former 1996 Plan. The primary changes include a residential development project created on the southwest side of the City and the development of rural residential lots north of the Burntwood River (Manitoba Intergovernmental Affairs, personal communication, 2002).

Aside from these changes, the general framework and fundamentals of the Development Plan remain the same. Thompson's 2001 Development Plan (the Plan) is intended to be an overall policy statement for future growth and development in the City of Thompson and the Local Government District of Mystery Lake, or, the Planning District. The overall purpose of the Plan is to meet the needs of the people

currently living in the Planning District, and also to work in conjunction with surrounding communities to promote an integrated regional development plan. It is also intended to be a functional document providing general guidelines for sustainable and renewable resource extraction and development, as well as other developments, such as recreation, on Crown Lands within the Planning District (Thompson Community Planning Services Office 2001).

The Plan aims to ensure that commercial or industrial development occurring in the Local Government District (LGD) of Mystery Lake takes place in a manner that is compatible with resource management objectives and does not detract from the economic base of the City of Thompson. Additionally, consideration has been given to minimizing conflict between other incompatible land uses and Manitoba Hydro's many and varied facilities in the Planning District (Thompson Community Planning Services Office 2001).

Goals

The general intent of the Plan is to work in cooperation with the various stakeholders of the Planning District towards development goals. As such, it is recommended that those jurisdictions impacted by policy decisions made within the District, as well as those made adjacent to this Planning District, be included in planning processes (Thompson Community Planning Services Office 2001).

The Plan outlines primary goals in the areas of the environment, sustainable development, social development and economic development. Each of these is discussed in turn.

Environment

The Development Plan aims, "to maximize the quality of the environment of the Thompson Planning District by minimizing the pollution of water, air and land through the preservation of special attributes of the area's landscape." The Plan indicates that all other goals should attempt to satisfy the requirements of the above-stated environmental goal so as to improve the quality of life for people living in the Planning District (Thompson Community Planning Services Office 2001).

Sustainable Development

The Plan states the importance of ensuring that "environmental, economic, social and developmental activities meet the needs of the present without compromising the ability of future generations to meet their needs" (Thompson Community Planning Services Office 2001).

Social Development

The Plan indicates the goal of "creating a desirable community that promotes well-being and safety, as well as extending options to citizens of the Planning District in meeting their basic needs and aspirations" (Thompson Community Planning Services Office 2001).

Economic Development

The final goal of the Plan is to develop the most diversified economic potential possible while enhancing the general quality of life of local residents. Additionally, efforts are to be made to provide the maximum level of District-wide services at a minimum public expense in accordance with the District's financial capabilities. More specific goals include:

- The development of an economic plan that “reflects the nature of the District, the important strategic role the City of Thompson has played in the past and the role it will continue to play in the present and the future economic growth of Northern Manitoba.”
- Maximizing development opportunities in all sectors for the benefit of the District and its residents. This includes encouraging communication and co-ordination between the various agencies within the Planning District with regards to recreational opportunities while resource development is taking place (Thompson Community Planning Services Office 2001).

Planning District Concerns Addressed in the Development Plan

There are a number of district concerns that have played an important role in shaping the Development Plan. Ultimately, all land use decisions in the District affect the City of Thompson and its residents. Therefore, in developing the Plan, the Planning Board considered all commitments affecting land use that may have an impact on local quality of life (Thompson Community Planning Services Office 2001).

Regulations governing land use were established by agreement prior to the creation of the City of Thompson and the Planning District. The provisions of provincial and federal acts such as *The Crown Lands Act*, *The Fisheries Act*, *The Water Power Act*, *The Mines Act* and *The Forestry Act* ensured that natural resource exploration, development and management could be promoted without conflict from other land uses within the LGD of Mystery Lake. The District Development Plan, as a public policy document, is intended to support this historical arrangement and to protect lands outside the City of Thompson for these uses. Regulations and procedures as stipulated in the above-mentioned Acts, are intended to continue to provide the framework for resource development in the District (Thompson Community Planning Services Office 2001).

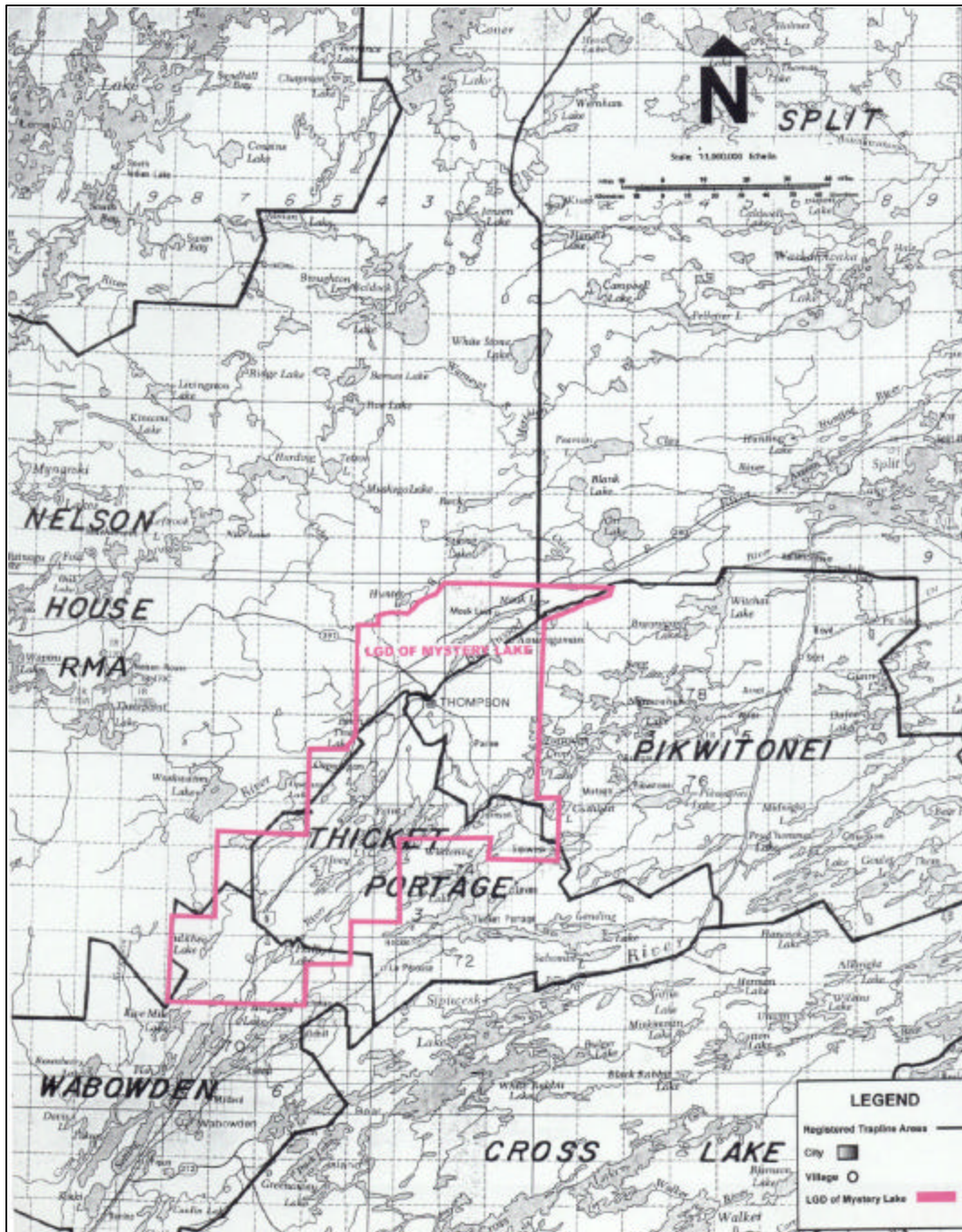
Of particular concern are the fisheries management considerations within the LGD of Mystery Lake. These currently consist of maintaining fish stocks in Paint Lake and Setting Lake and preventing the degradation of fish habitat on waterways throughout the Planning District (Thompson Community Planning Services Office 2001).

The Plan indicates that all types of development have the potential to affect surface water and groundwater quality and quantity. This concern is elevated by the fact that a major water power reserve runs through the District. Consequently, maintenance of the water quality and quantity as well as adequate protection against flooding and erosion are paramount within the Plan (Thompson Community Planning Services Office 2001).

In the Development Plan, the Planning District Board also recognizes that the Northern Flood Agreement area overlaps with the Thompson Planning District. Under the Northern Flood Agreement, the Nisichawayasihk First Nation and the Tataskweyak First Nation communities have designated Resource Management Areas from which compensation lands have been selected. Consultation occurs with First Nations communities in these Resource Management Areas, and comprehensive Land Use and Resource Management Plans are to be developed in consultation with the Planning District (Thompson Community Planning Services Office 2001).

Also within the Plan, is a recognition that Resource Management Areas (RMAs) and Registered Trapline Districts (RTLs) for various local communities encompass the majority of the LGD of Mystery Lake. These include: a small portion located along the southeast boundary of the Nelson House RMA and RTL; the western section of the Thicket Portage RTL (excluding Paint Lake which is not included in the LGD); the northeast section of the Wabowden RTL including Tulibee Lake and Five Mile Lake; and the northwest corner of the Split Lake RMA and RTL located by Moak Lake (see Figure 3.26). The Plan recognizes that these outlying communities will be affected by land use and resource management decisions within the Thompson Planning District. Similarly, the Thompson Planning District will be affected by decisions made outside its boundaries by these communities. Consequently, the Plan states the importance of on-going consultation among all communities affected (Thompson Community Planning Services Office 2001).

Figure 3.26
Map of the Local Government District of Mystery Lake



District Policies

The Development Plan expresses the desire of the Planning District Board to encourage multiple land uses through the maximization of compatible recreation, resource harvesting and resource extraction activities. To be successful in implementing such a policy, consultation among all parties involved in land use decisions is necessary (Thompson Community Planning Services Office 2001).

For example, the Planning Board recognizes the importance of large-scale commercial or industrial development within the District. However, such developments may not be desirable near populated areas outside the urban setting. The Plan suggests that the Board would support developments of this type if there were a possible contribution to the local economy through the provision of jobs or support of local businesses (Thompson Community Planning Services Office 2001). The Plan also indicates, however, that if “these developments are adjacent to a provincial road or provincial trunk highway, direct access will not be permitted unless mitigation measures, approved by Manitoba Transportation and Government Services, are incorporated into the development.” The Plan suggests that the establishment of an internal road system that does not rely directly on the provincial system would be the preferred means of access to the development (Thompson Community Planning Services Office 2001).

Water Resources

As mentioned previously, water resources management is an important consideration under the Thompson Development Plan. Water resources management within the Planning District is to be regulated in accordance with the following objectives and policies:

Objectives

Generally speaking, the Development Plan attempts to protect and enhance the water resources of the District by ensuring that “surface and groundwater quality and quantity is adequate for all designated uses and ecosystem needs.”

For this to occur, the Plan stipulates that all proposed developments include a consideration of the impact they may place on water resources within the Planning District. This consideration is intended to “ensure the long-term sustainability of the District’s surface and groundwater for the benefit of all” (Thompson Community Planning Services Office 2001).

Policies

According to the Plan, the District should analyze each proposed development to ensure that the quality and quantity of water is adequate for all designated uses and ecosystem needs. Where development is proposed in the Burntwood River Water Power Reserve, the Plan asks that the Planning Board consider the effects or hazards of any additional use in relationship to water storage requirements.

The Plan indicates that all water storage lands within the District are to be considered as encumbered lands and reserved for water power purposes. Where intensive use is warranted, these water storage lands are to be identified by legal survey, with the remainder to be identified by control elevation.

Lands presently administered by the Lands Branch of the Department of Conservation, and located within the Burntwood River Water Power Reserve, are already designated for use. Any new proposed land use program requires either the removal of this designation by the Water Resources Branch, or in conjunction with water storage requirements, is to be subject to conditions of use and liability associated with this designation under the Plan.

The Plan states that the Burntwood River Water Power Reserve restricts permanent development below the 100-year flood elevation and in specified erosion and slumping zones. Some temporary uses within the Water Power Reserve may be approved by Hydro.

Finally, the Plan suggests that the Planning District Board and Manitoba Hydro should “co-operate to develop a sustainable water resource compatible for all needs” (Thompson Community Planning Services Office 2001).

Zoning By-Law

The Development Plan is accompanied by a set of regulations established in the implementing Zoning By-law. The City of Thompson Zoning By-law No. 1120-83 was created in 1983. A number of amendments, primarily in the form of map changes, have occurred since the By-law was originally drafted. The By-law is intended to regulate the use and development of land within the City of Thompson.

Under the Zoning By-law all areas of the City have been zoned for a specified land use or development purpose. Fifteen zones have been established for the City of Thompson and these include:

- Single Family Dwelling Zone (“R1”)
 - Low density residential neighbourhoods.
- Two Family Dwelling Zone (“R2”)
 - Low to moderately-low density residential neighbourhoods.
- Multiple Family Dwelling Zone (“R3”)
 - Residential neighbourhoods of moderately-low to medium density housing.
 - Family dwellings, townhouses, row houses and apartment buildings of less than three storeys in height.
- Multiple Family Dwelling Zone (“R4”)
 - Neighbourhoods of medium to high density apartment-style housing.
- Mobile Home Subdivision Zone (“R-MH-S”)
 - Low density residential zones for mobile homes on individually owned lots.
- Mobile Home Park Zone (“R-MH-P”)
 - Zone for mobile homes whereby mobile home spaces are provided for rent or lease.
- Neighbourhood Commercial Zone (“C1”)
 - Characteristically small in size, either in or adjacent to residential zones, for the retailing of commodities to satisfy the daily household or personal needs of the neighbourhood’s residents.
- Central Commercial Zone (“C2”)
 - Intensive commercial retail businesses and offices for residents of the entire community and outlying areas.
- General Commercial Zone (“C3”)
 - Land for a relatively limited range of retail services which would be used in conjunction with a warehouse or storage use, a highway-type commercial use, or because of the type of operation would require large sites or buildings.
- Light Industrial Zone (“M1”)
 - Light manufacturing, processing, distribution, storage and warehousing of goods, where such activities are not considered obnoxious or offensive.

- Heavy Industrial Zone (“M2”)
 - Wide range of industrial uses where a certain level of nuisance factor must be accepted as a characteristic of the use (most are kept separate from commercial and residential uses).
- Public Environmental Reserve Zone (“PER”)
 - Intended to protect those lands below the Manitoba Hydro Severance Line from intensive or incompatible development (includes lands that are flood-prone, subject to erosion hazard and bank or shore instability).
- Parks and Recreation Zone (“PR”)
 - Active and passive recreational usage areas.
- Public and Institutional Zone (“PI”)
 - Land for government, public, institutional and non-profit group development.
- Urban Hold Zone (“UH”)
 - Reserve, or hold land for future use as indicated in the Development Plan, as well as uses, which may not be as yet determined.

The zones specify their general intent, permitted uses, conditional uses and requirements (Thompson Community Planning Services Office 1983).

3.2 OTHER COMMUNITIES IN THE PROJECT REGION

Other communities in the Project Region include First Nation communities, the Incorporated community of Gillam (the City of Thompson and the LGD of Mystery Lake were discussed independently in the previous section) and Northern Affairs communities. The following basic socio-economic characteristics of these communities are presented in this section based on published information:

- Population
 - Total Population
 - Population by Age and Sex
 - Population Growth Rates
- Economy
 - Employment Characteristics of Residents
 - Income
 - Education and Training

3.2.1 First Nation Communities in the Project Region

First Nation communities located within the Project Region for the proposed Wuskwatim Generating Station include:

- Nisichawayasihk Cree Nation (NCN)
- Tataskweyak Cree Nation (TCN)
- War Lake Cree Nation
- York Factory First Nation
- Fox Lake Cree Nation
- Pimicikamak Cree Nation (PCN), and
- Norway House Cree Nation

3.2.1.1 Population

3.2.1.1.1 Total Population

[Table 3.51](#) below shows the available population data from three different sources for First Nation communities in the Project Region. Where data were available, on- and off-reserve populations, as well as those on Crown Land, are specified.

It is clear from [Table 3.51](#) that there is considerable variability in population estimates depending on the source and year. With a total population of 3,493 people, Norway House had the largest population of the First Nation communities, while PCN at Cross Lake had the second highest population with 2,977 residents, followed by NCN at Nelson House with 2,226 residents. TCN had the fourth largest total population (1,274), at less than half the size of the Norway House or PCN population. The remaining three First Nation communities had populations of less than 300 people, with War Lake being the smallest (Manitoba Health 2000).

According to 2002 Indian and Northern Affairs Canada (INAC) data, PCN and TCN were the only First Nation communities in the Project Region with the majority of their members living on-reserve. Other First Nation communities in this region had a larger proportion of members living off-reserve or on Crown Land. Similar data were not available for Norway House (INAC 2002).

Table 3.51
Total Population of First Nation Communities in the Project Region: 1996, 2000 and 2002

Community	Statistics Canada 1996	Manitoba Health 2000	INAC January, 2002
Nisichawayasihk Cree Nation (NCN)			
• On-reserve	1,760	2,226	2,367
• Off-reserve			1,333
• On Crown land			1,021
Tataskweyak Cree Nation (TCN)			
• On-reserve	1,500	1,274	1,847
• Off-reserve			822
• On Crown land			0
War Lake Cree Nation			
• On-Reserve	155	83	80
• Off-reserve			91
• On Crown land			53
York Factory First Nation			
• On-reserve	300	278	412
• Off-reserve			543
• On Crown land			0
Fox Lake Cree Nation			
• On-reserve	155	230	141
• Off-reserve			597
• On Crown land			1,171
Pimicikamak Cree Nation (PCN)			
• On-reserve	3,495	2,977	4,085
• Off-reserve			1,679
• On Crown land			3
Norway House Cree Nation			
• On-reserve	3,400	3,493	4,069
• Off-reserve			1,455
• On Crown land			N/A
Total On-Reserve	10,765	10,561	13,001
Total Off-Reserve			6,520
Total on Crown land			2,248

Sources:

1. Census of Canada 1996.
2. Manitoba Health Population Report, June 1, 2000. Note that First Nations members are counted according to the postal

code (location) where they reside.

3. Indian and Northern Affairs Canada (INAC), January 2002 (except for Norway House Cree Nation).
4. Norway House Cree Nation Profile, 2000.

Notes:

1. No INAC 2002 information was available for Norway House. The most recent INAC data presently available (December 2000) are used for Norway House (Source: Norway House Cree Nation Profile). The data does not distinguish off-reserve populations on Crown Land.
2. "On-Reserve" includes registered males and females on own reserve.
3. "Off-Reserve" includes registered males and females on other reserves and off-reserve.
4. "On Crown Land" includes registered males and females on Own Crown land and No Band Crownland"

Population Structure by Age

Population structure by age and sex for First Nation communities in the Project Region was determined using 1996 Census of Canada data and the June 1, 2000 Manitoba Health Population Report. Discrepancies between these sources of data can be attributed to the date when the data were collected, the method employed to collect the data and / or population changes in the communities.

Both data sources indicate that all of these communities had a large proportion, approximately 35 to 40 per cent, of their population below the age of 15. This was nearly double the total proportion of the provincial population of Manitoba below the age of 15, which was approximately 20 per cent in both 1996 and 2000. It corresponds closely to the provincial First nation population. Nearly 40 per cent of the total First Nation population in Manitoba, however, was under 15 years of age in both 1996 and 2000 (Manitoba Health 2000, Statistics Canada 1996).

Population age and sex data for each of the First Nation communities in the Project Region are displayed below. For the most part, the gender distribution within First Nation communities in the Project Region was fairly even between males and females (Manitoba Health 2000).

Population age and sex data for NCN is located in the in Section 2.1.1, as part of the Local Region.

Tataskweyak Cree Nation (TCN)

Table 3.52 below indicates that in both 1996 and 2000, Tataskweyak Cree Nation (TCN) had a very young population with nearly 40 per cent of on-reserve members less than 15 years of age. There was also an approximately ten per cent discrepancy in gender distribution, in favour of the males (1.1:1.0).

Table 3.52
On-Reserve Age and Sex Distribution for Tataskweyak Cree Nation: 1996 and 2000

Characteristics	Tataskweyak Cree Nation					
	1996 Statistics Canada			2000 Manitoba Health Population Report		
	Total	Male	Female	Total	Male	Female
Total – All persons	1,500	785	715	1,274	664	610
Age 0-4	220 (14.7%)	120 (8.0%)	100 (6.7%)	160 (12.6%)	85 (6.7%)	75 (5.9%)
Age 5-9	200 (13.3%)	110 (7.3%)	90 (6.0%)	186 (14.6%)	100 (7.8%)	86 (6.8%)
Age 10-14	140 (9.3%)	70 (4.7%)	70 (4.7%)	136 (10.7%)	68 (5.3%)	68 (5.3%)
Age 15-19	145 (9.7%)	65 (4.3%)	80 (5.3%)	118 (9.3%)	53 (4.2%)	65 (5.1%)
Age 20-24	160 (10.7%)	80 (5.3%)	80 (5.3%)	104 (8.2%)	48 (3.8%)	56 (4.4%)
Age 25-29	165 (11.0%)	90 (6.0%)	75 (5.0%)	114 (8.9%)	59 (4.6%)	55 (4.3%)
Age 30-34	105 (7.0%)	55 (3.7%)	50 (3.3%)	105 (8.2%)	58 (4.6%)	47 (3.7%)
Age 35-39	95 (6.3%)	50 (3.3%)	45 (3.0%)	81 (6.4%)	41 (3.2%)	40 (3.1%)
Age 40-44	60 (4.0%)	30 (2.0%)	30 (2.0%)	66 (5.2%)	34 (2.7%)	32 (2.5%)
Age 45-49	50 (3.3%)	30 (2.0%)	20 (1.3%)	47 (3.7%)	27 (2.1%)	20 (1.6%)
Age 50-54	45 (3.0%)	25 (1.7%)	20 (1.3%)	40 (3.1%)	23 (1.8%)	17 (1.3%)
Age 55-59	40 (2.7%)	25 (1.7%)	20 (1.3%)	35 (2.7%)	19 (1.5%)	16 (1.3%)
Age 60-64	20 (1.3%)	15 (1.0%)	15 (0.1%)	30 (2.4%)	18 (1.4%)	12 (0.9%)
Age 65-69	15 (1.0%)	10 (0.7%)	15 (0.1%)	17 (1.3%)	9 (0.7%)	8 (0.6%)
Age 70-74	10 (0.7%)	10 (0.7%)	5 (0.3%)	19 (1.5%)	11 (0.9%)	8 (0.6%)
Age 75 or greater	25 (1.7%)	15 (1.0%)	10 (0.6%)	16 (1.3%)	11 (0.9%)	5 (0.4%)
Total population age 15 and over	945	500	465	792	411	381
Per cent of the total population ages 15 and over	63.0%	33.3%	31.0%	62.2%	32.3%	29.9%

Sources:

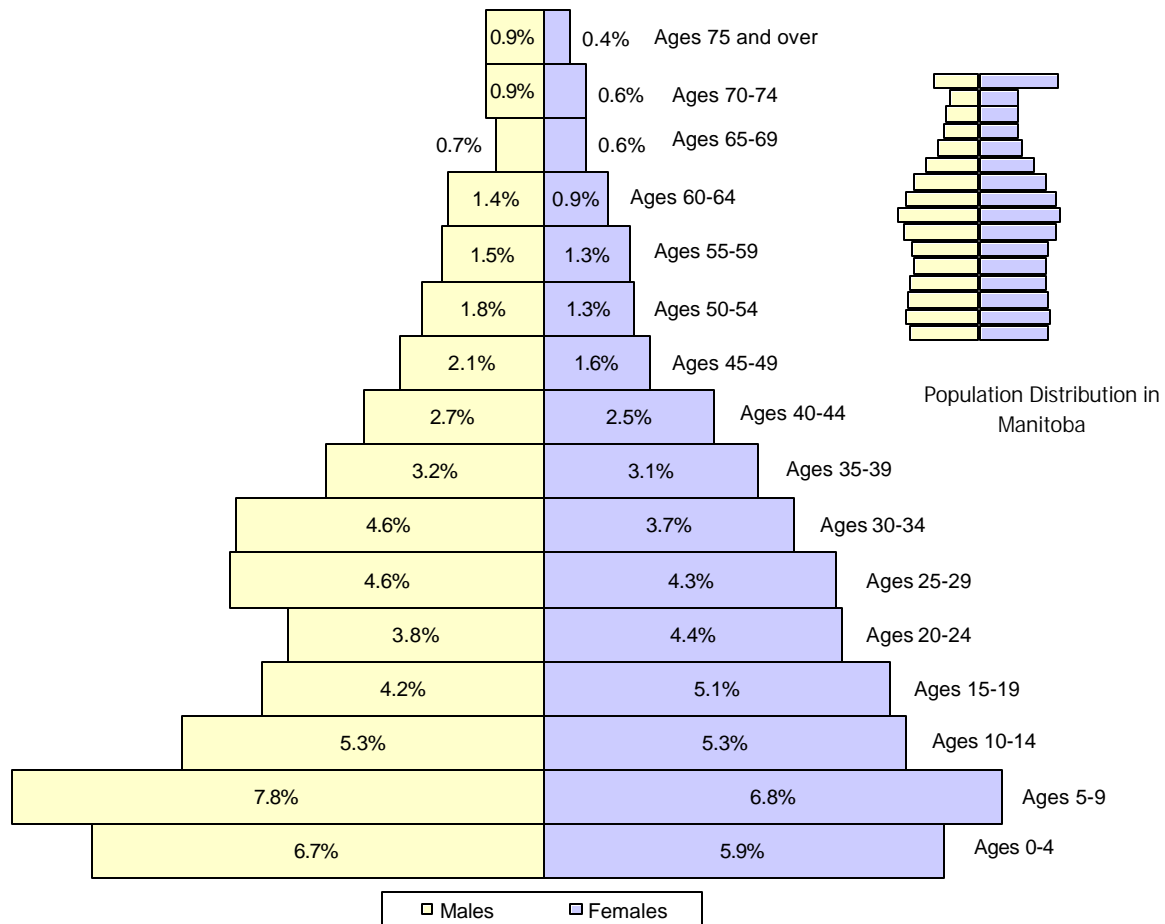
1. Statistics Canada 1996 Census of Canada – 100% Data
2. Manitoba Health Population Report June 1, 2000

Notes:

1. Population data are based on records of residents registered with Manitoba Health as of June 1st, 2000.
2. Column totals may not add due to Statistics Canada rounding.

Figure 3.27 below is based on 2000 Manitoba Health data and graphically depicts the on-reserve population of TCN by age and sex, as compared to the provincial distribution in 2000.

Figure 3.27
Population Distribution by Age and Per cent of Total Population of
On-Reserve Males and Females for Tataskweyak Cree Nation: 2000



Source: Manitoba Health Population Report June 1, 2000.

Note: Population data are based on records of residents registered with Manitoba Health as of June 1st, 2000.

War Lake Cree Nation

War Lake was the smallest First Nation community in the Project Region. As with other First Nation populations, the majority of on-reserve War Lake members were relatively young in both 1996 and 2000. Table 3.53 and Figure 3.28 below display War Lake’s population by age and sex based on 1996 Statistics Canada and 2000 Manitoba Health data. Manitoba Health seems to have significantly underestimated the population of this First Nation based on our understanding of its size. Therefore, the Statistics Canada estimate is more realistic.

Table 3.53
On-Reserve Age and Sex Distribution for War Lake Cree Nation: 1996 and 2000

Characteristics	War Lake Cree Nation					
	1996 Statistics Canada			2000 Manitoba Health Population Report		
	Total	Male	Female	Total	Male	Female
Total – All persons	155	80	75	83	38	45
Age 0-4	20 (12.9%)	10 (6.5%)	10 (6.5%)	7 (8.4%)	2 (2.4%)	5 (6.0%)
Age 5-9	15 (9.7%)	10 (6.5%)	5 (3.2%)	16 (19.3%)	9 (10.8%)	7 (8.4%)
Age 10-14	10 (6.5%)	5 (3.2%)	5 (3.2%)	13 (15.7%)	7 (8.4%)	6 (7.2%)
Age 15-19	25 (16.1%)	10 (6.5%)	15 (9.7%)	6 (7.2%)	1 (1.2%)	5 (6.0%)
Age 20-24	5 (3.2%)	0	5 (3.2%)	7 (8.4%)	4 (4.8%)	3 (3.6%)
Age 25-29	10 (6.5%)	5 (3.2%)	5 (3.2%)	2 (2.4%)	0 (0.0%)	2 (2.4%)
Age 30-34	10 (6.5%)	5 (3.2%)	5 (3.2%)	3 (3.6%)	0 (0.0%)	3 (3.6%)
Age 35-39	15 (9.7%)	10 (6.5%)	5 (3.2%)	5 (6.0%)	2 (2.4%)	3 (3.6%)
Age 40-44	5 (3.2%)	0	5 (3.2%)	6 (7.2%)	4 (4.8%)	2 (2.4%)
Age 45-49	5 (3.2%)	0	5 (3.2%)	3 (3.6%)	0 (0.0%)	3 (3.6%)
Age 50-54	5 (3.2%)	5 (3.2%)	0	5 (6.0%)	3 (3.6%)	2 (2.4%)
Age 55-59	0	0	0	3 (3.6%)	2 (2.4%)	1 (1.2%)
Age 60-64	10 (6.5%)	5 (3.2%)	5 (3.2%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Age 65-69	0	0	0	2 (2.4%)	1 (1.2%)	1 (1.2%)
Age 70-74	0	0	0	1 (1.2%)	0 (0.0%)	1 (1.2%)
Age 75 or greater	5 (3.2%)	5 (3.2%)	0	4 (4.8%)	3 (3.6%)	1 (1.2%)
Total population age 15 and over	105	45	50	47	20	27
Per cent of the total population ages 15 and over	67.7%	29.0%	32.3%	56.6%	24.1%	32.5%

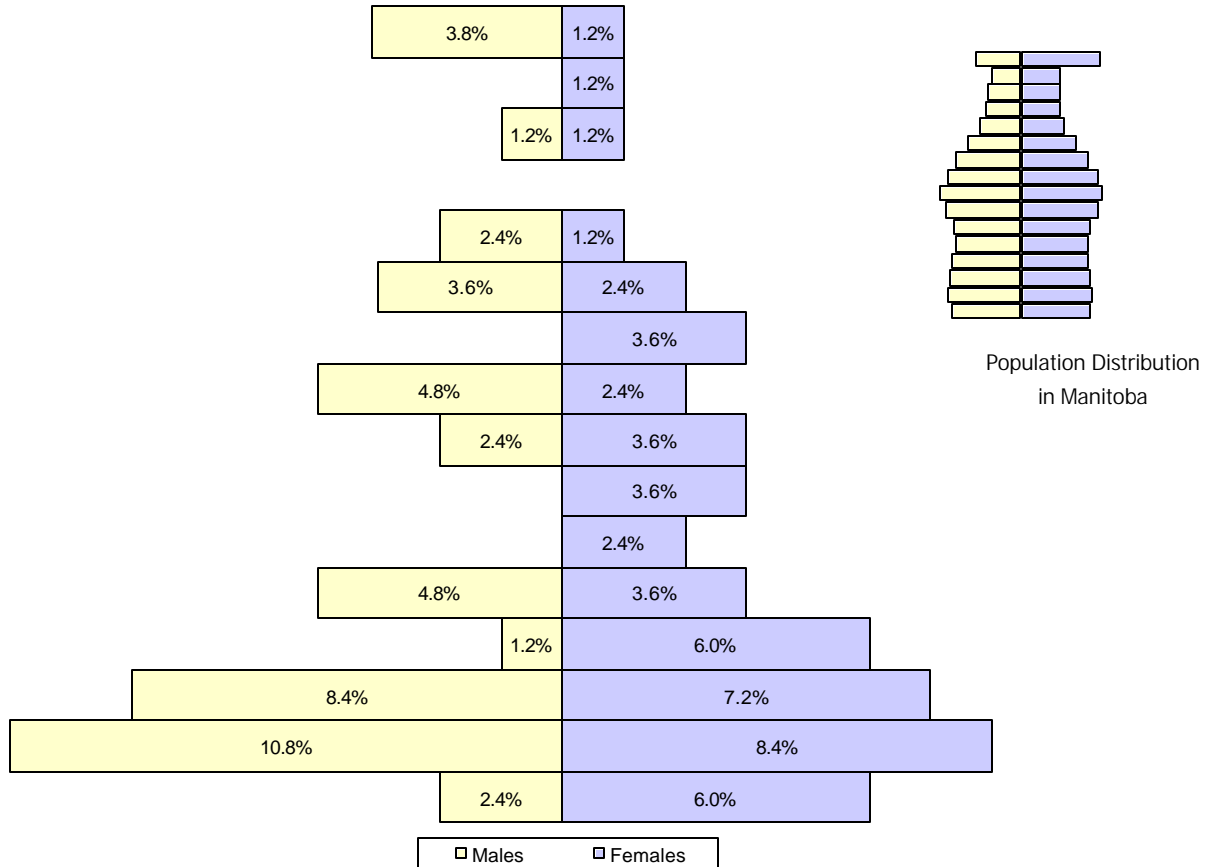
Sources:

1. Statistics Canada 1996 Census of Canada – 100% Data.
2. Manitoba Health Population Report June 1, 2000.

Notes:

1. Population data are based on records of residents registered with Manitoba Health as of June 1st, 2000.
2. The data used to create the age and sex distribution for War Lake were obtained from the 1996 Census of Canada data for what was then termed Ilford (Indian Settlement). The War Lake reserve had not yet been created in 1996, and this is the most reliable Census data set available to determine age and sex distribution within the War Lake Cree Nation.
3. Column totals may not add due to Statistics Canada rounding.

Figure 3.28
Population Distribution by Age and Per cent of Total Population of
On-Reserve Males and Females for War Lake: 2000



Source: Statistics Canada 1996 Census of Canada – 100% Data

York Factory First Nation (York Landing)

The on-reserve population of York Factory First Nation, located at York Landing, was small and relatively young in both 1996 Statistics Canada and 2000 Manitoba Health data. Each of these data sources indicated that approximately one third (33 per cent) of the population was below 15 years of age in 1996 and 2000. In addition, two thirds (66 per cent) of the population was below 30 years of age. In each of these years, only slightly more than 10 per cent of the population was greater than 50 years of age.

Table 3.54 and Figure 3.29 below outline the population distribution of York Factory First Nation by age and sex. The relatively small population of York Factory First Nation may have led to discrepancies in the data presented.

Table 3.54
On-Reserve Age and Sex Distribution for York Factory First Nation: 1996 and 2000

Characteristics	York Factory First Nation					
	1996 Statistics Canada			2000 Manitoba Health Population Report		
	Total	Male	Female	Total	Male	Female
Total – All persons	300	155	145	278	141	137
Age 0-4	45 (15.0%)	15 (5.0%)	20 (6.7%)	32 (11.5%)	15 (5.4%)	17 (6.1%)
Age 5-9	30 (10.0%)	15 (5.0%)	15 (5.0%)	37 (13.3%)	19 (6.8%)	18 (6.5%)
Age 10-14	25 (8.3%)	10 (3.3%)	15 (5.0%)	20 (7.2%)	10 (3.6%)	10 (3.6%)
Age 15-19	35 (11.7%)	20 (6.7%)	15 (5.0%)	23 (8.3%)	7 (2.5%)	16 (5.8%)
Age 20-24	35 (11.7%)	20 (6.7%)	15 (5.0%)	32 (11.5%)	20 (7.2%)	12 (4.3%)
Age 25-29	30 (10.0%)	15 (5.0%)	15 (5.0%)	34 (12.2%)	19 (6.8%)	15 (5.4%)
Age 30-34	10 (3.3%)	5 (1.7%)	5 (1.7%)	17 (6.1%)	6 (2.2%)	11 (4.0%)
Age 35-39	25 (8.3%)	15 (5.0%)	10 (3.3%)	21 (7.6%)	10 (3.6%)	11 (4.0%)
Age 40-44	15 (5.0%)	5 (1.7%)	10 (3.3%)	19 (6.8%)	13 (4.7%)	6 (2.2%)
Age 45-49	20 (6.7%)	10 (3.3%)	10 (3.3%)	9 (3.2%)	5 (1.8%)	4 (1.4%)
Age 50-54	10 (3.3%)	5 (1.7%)	5 (1.7%)	11 (4.0%)	5 (1.8%)	6 (2.2%)
Age 55-59	10 (3.3%)	5 (1.7%)	5 (1.7%)	7 (2.5%)	4 (1.4%)	3 (1.1%)
Age 60-64	0	0	0	4 (1.4%)	1 (0.4%)	3 (1.1%)
Age 65-69	10 (3.3%)	5 (1.7%)	5 (1.7%)	2 (0.7%)	2 (0.7%)	0 (0.0%)
Age 70-74	0	0	0	4 (1.4%)	2 (0.7%)	2 (0.7%)
Age 75 or greater	5 (1.7%)	5 (1.7%)	0	6 (2.2%)	3 (1.1%)	3 (1.1%)
Total population age 15 and over	200	110	95	189	97	92
Per cent of the total population ages 15 and over	66.7%	36.7%	31.7%	68.0%	34.9%	33.1%

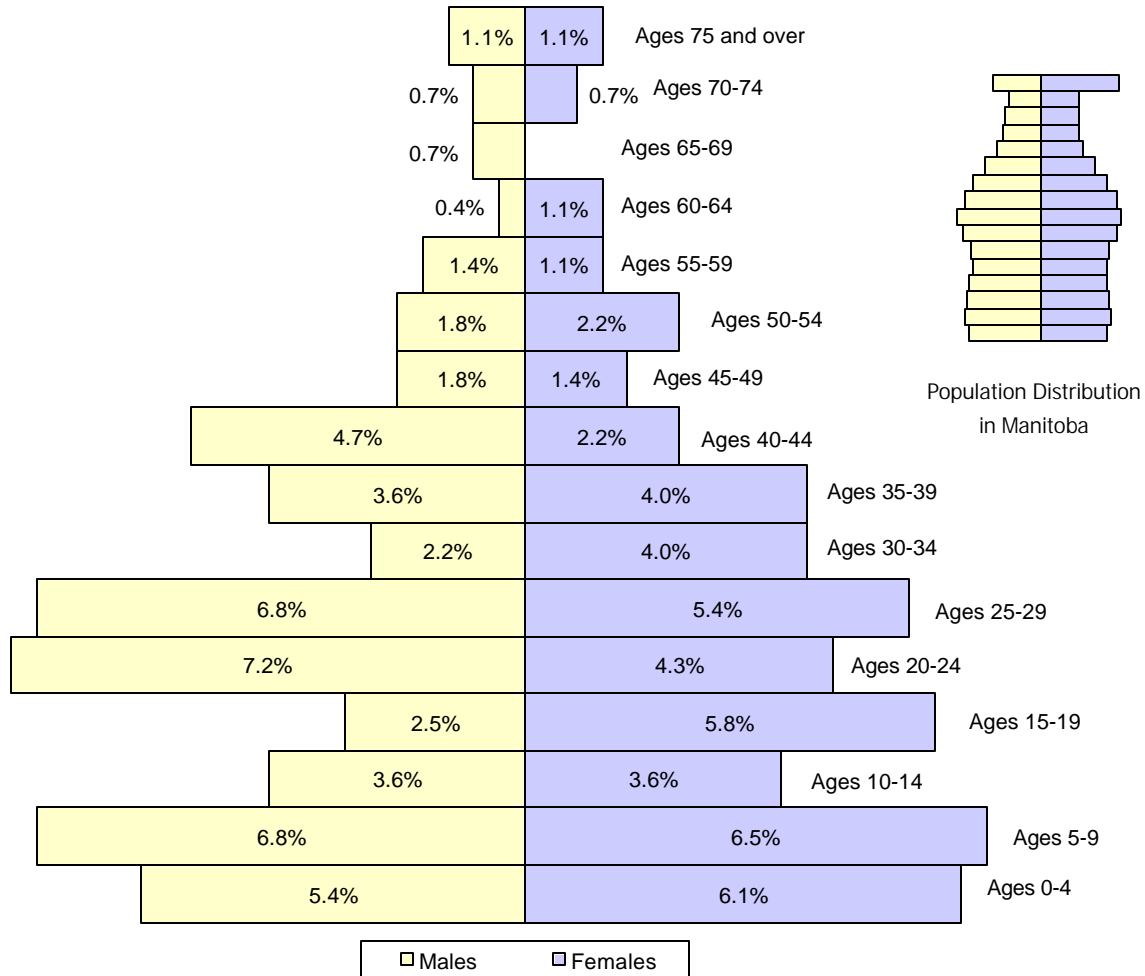
Sources:

1. Statistics Canada 1996 Census of Canada – 100% Data.
2. Manitoba Health Population Report June 1, 2000.

Notes:

1. Population data are based on records of residents registered with Manitoba Health as of June 1st, 2000.
2. Column totals may not add due to Statistics Canada rounding.

Figure 3.29
Population Distribution by Age and Per cent of Total Population of
On-Reserve Males and Females for York Factory First Nation: 2000



Source: Manitoba Health Population Report June 1, 2000

Note: Population data are based on records of residents registered with Manitoba Health as of June 1st, 2000.

Fox Lake Cree Nation

Compared to other First Nation communities in the Project Region, the on-reserve population of Fox Lake Cree Nation was more evenly distributed among the various age classes. Table 3.55 indicates that less than 30 per cent of the population was 15 years of age or younger in both 1996 and 2000. This is lower than other First Nations communities in the Project Region (Manitoba Health 2000, Statistics Canada 1996).

Table 3.55
On-Reserve Age and Sex Distribution for Fox Lake Cree Nation: 1996 and 2000

Characteristics	Fox Lake Cree Nation					
	1996 Statistics Canada			2000 Manitoba Health Population Report		
	Total	Male	Female	Total	Male	Female
Total – All persons	155	80	75	230	112	118
Age 0-4	20 (12.9%)	5 (3.2%)	15 (9.7%)	22 (9.6%)	13 (4.7%)	9 (3.9%)
Age 5-9	15 (9.7%)	10 (6.5%)	5 (3.2%)	24 (10.4%)	9 (3.2%)	15 (6.5%)
Age 10-14	10 (6.5%)	5 (3.2%)	5 (3.2%)	17 (7.4%)	7 (2.5%)	10 (4.3%)
Age 15-19	15 (9.7%)	5 (3.2%)	10 (6.5%)	15 (6.5%)	8 (2.9%)	7 (3.0%)
Age 20-24	10 (6.5%)	5 (3.2%)	5 (3.2%)	18 (7.8%)	11 (4.0%)	7 (3.0%)
Age 25-29	15 (9.7%)	10 (6.5%)	5 (3.2%)	18 (7.8%)	7 (2.5%)	11 (4.8%)
Age 30-34	5 (3.2%)	0	5 (3.2%)	17 (7.4%)	9 (3.2%)	8 (3.5%)
Age 35-39	15 (9.7%)	10 (6.5%)	5 (3.2%)	19 (8.3%)	11 (4.0%)	8 (3.5%)
Age 40-44	5 (3.2%)	0	5 (3.2%)	18 (7.8%)	7 (2.5%)	11 (4.8%)
Age 45-49	0	0	0	17 (7.4%)	6 (2.2%)	11 (4.8%)
Age 50-54	10 (6.5%)	5 (3.2%)	5 (3.2%)	12 (5.2%)	7 (2.5%)	5 (2.2%)
Age 55-59	5 (3.2%)	5 (3.2%)	0	10 (4.3%)	6 (2.2%)	4 (1.7%)
Age 60-64	10 (6.5%)	5 (3.2%)	5 (3.2%)	5 (2.2%)	4 (1.4%)	1 (0.4%)
Age 65-69	5 (3.2%)	0	5 (3.2%)	8 (3.5%)	2 (0.7%)	6 (2.6%)
Age 70-74	5 (3.2%)	5 (3.2%)	0	4 (1.7%)	2 (0.7%)	2 (0.9%)
Age 75 or greater	0	0	0	6 (2.6%)	3 (1.1%)	3 (1.3%)
Total population age 15 and over	110	50	50	167	83	84
Per cent of the total population ages 15 and over	71.0%	32.3%	32.3%	72.6%	36.1%	36.5%

Sources:

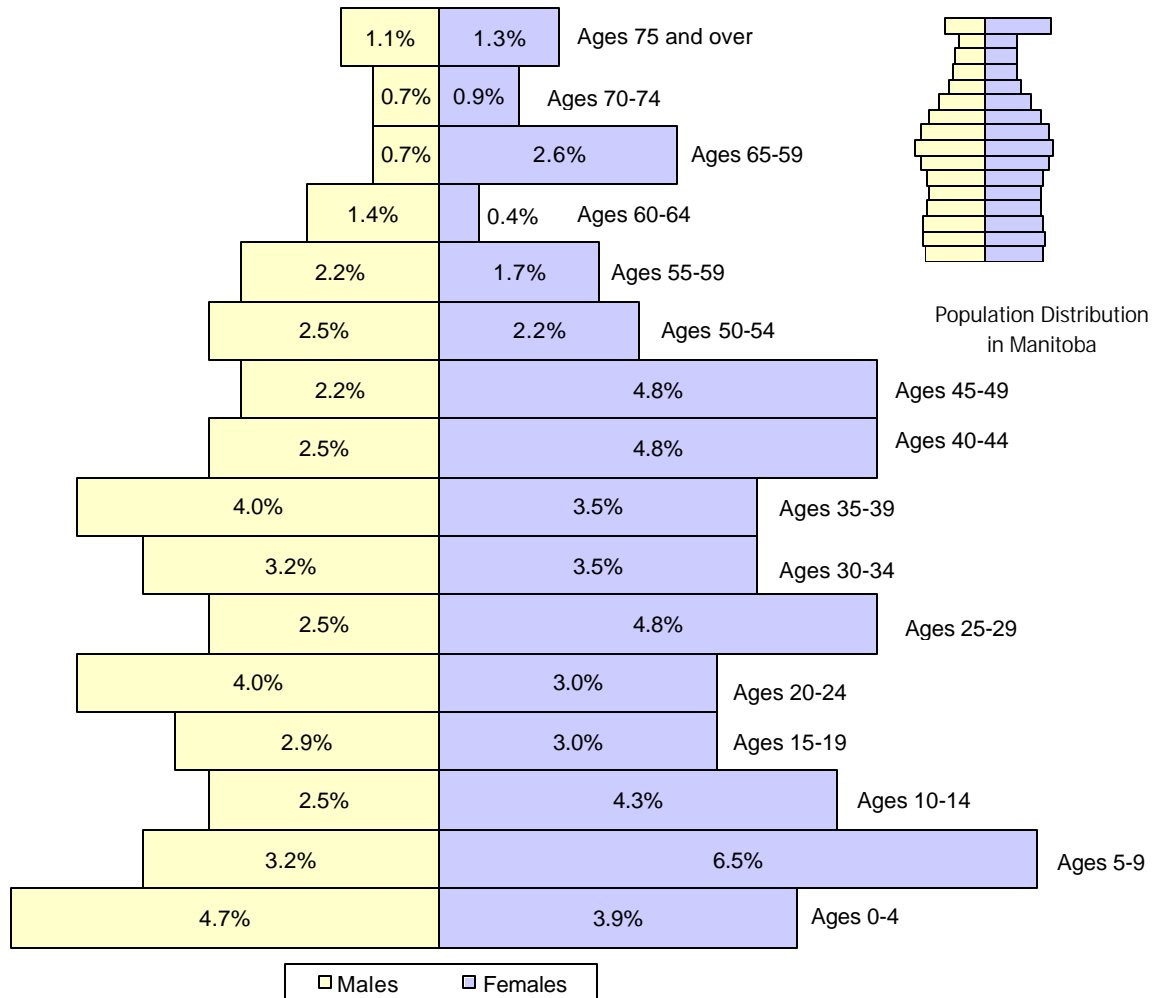
1. Statistics Canada 1996 Census of Canada – 100% Data.
2. Manitoba Health Population Report June 1, 2000.

Notes:

1. Population data are based on records of residents registered with Manitoba Health as of June 1st, 2000.
2. Age and sex distribution data for Cross Lake were only available for reserve parcels 19, 19A and 19E.
3. Column totals may not add due to Statistics Canada rounding.

Figure 3.30 below indicates graphically the on-reserve population by age and sex of Fox Lake Cree Nation, as compared to the provincial population, based on 2000 Manitoba Health data.

Figure 3.30
Population Distribution by Age and Per cent of Total Population of
On-Reserve Males and Females for Fox Lake Cree Nation: 2000



Source: Manitoba Health Population Report June 1, 2000.

Note: Population data are based on records of residents registered with Manitoba Health as of June 1st, 2000.

Pimicikamak Cree Nation (PCN)

PCN had the largest population of all the First Nation communities in the Project Region. [Table 3.56](#) and [Figure 3.31](#) below outline PCN's on-reserve population by age and sex. According to both 2000 Manitoba Health and 1996 Statistics Canada data, PCN had a fairly young population, with more than 40 per cent of on-reserve members below the age of 15. Provincially, in 1996, only about 20 per cent of the population was below the age of 15.

The distribution between PCN males and females was very even at 1:1.03 (Manitoba Health 2000, Statistics Canada 1996).

Table 3.56
On-Reserve Age and Sex Distribution for Pimicikamak Cree Nation: 1996 and 2000

Characteristics	Pimicikamak Cree Nation					
	1996 Statistics Canada			2000 Manitoba Health Population Report		
	Total	Male	Female	Total	Male	Female
Total – All persons	3,495	1,770	1,725	2,977	1,509	1,468
Age 0-4	510 (14.6%)	260 (7.4%)	250 (7.2%)	370 (12.4%)	189 (6.3%)	181 (6.1%)
Age 5-9	510 (14.6%)	260 (7.4%)	250 (7.2%)	427 (14.3%)	216 (7.3%)	211 (7.1%)
Age 10-14	400 (11.4%)	200 (5.7%)	200 (5.7%)	396 (13.3%)	198 (6.7%)	198 (6.7%)
Age 15-19	355 (10.2%)	185 (5.3%)	170 (4.9%)	291 (9.7%)	148 (5.0%)	143 (4.8%)
Age 20-24	310 (8.9%)	160 (4.6%)	150 (4.3%)	219 (7.4%)	113 (3.8%)	106 (3.6%)
Age 25-29	285 (8.1%)	130 (3.7%)	155 (4.4%)	222 (7.5%)	111 (3.7%)	111 (3.7%)
Age 30-34	260 (7.5%)	125 (3.6%)	135 (3.9%)	219 (7.4%)	101 (3.4%)	118 (4.0%)
Age 35-39	210 (6.1%)	110 (3.2%)	100 (2.9%)	214 (7.2%)	111 (3.7%)	103 (3.5%)
Age 40-44	150 (4.2%)	75 (2.1%)	75 (2.1%)	153 (5.1%)	87 (2.9%)	66 (2.2%)
Age 45-49	135 (3.8%)	75 (2.1%)	60 (1.7%)	121 (4.1%)	62 (2.1%)	59 (2.0%)
Age 50-54	75 (2.1%)	40 (1.1%)	35 (1.0%)	88 (3.0%)	44 (1.5%)	44 (1.5%)
Age 55-59	95 (2.7%)	50 (1.4%)	45 (1.3%)	62 (2.1%)	34 (1.1)	28 (0.9%)
Age 60-64	50 (1.4%)	20 (0.6%)	30 (0.9%)	70 (2.3%)	39 (1.3%)	31 (1.0%)
Age 65-69	35 (1.0%)	20 (0.6%)	15 (0.4%)	44 (1.5%)	18 (0.6%)	26 (0.9%)
Age 70-74	35 (1.0%)	15 (0.4%)	20 (0.6%)	31 (1.0%)	14 (0.5%)	17 (0.6%)
Age 75 or greater	50 (1.4%)	30 (0.9%)	20 (0.5%)	50 (1.7%)	24 (0.8%)	26 (0.9%)
Total population age 15 and over	2,070	1,035	1,010	1,784	906	878
Per cent of the total population ages 15 and over	59.2%	29.6%	28.9%	59.9%	30.4%	29.5%

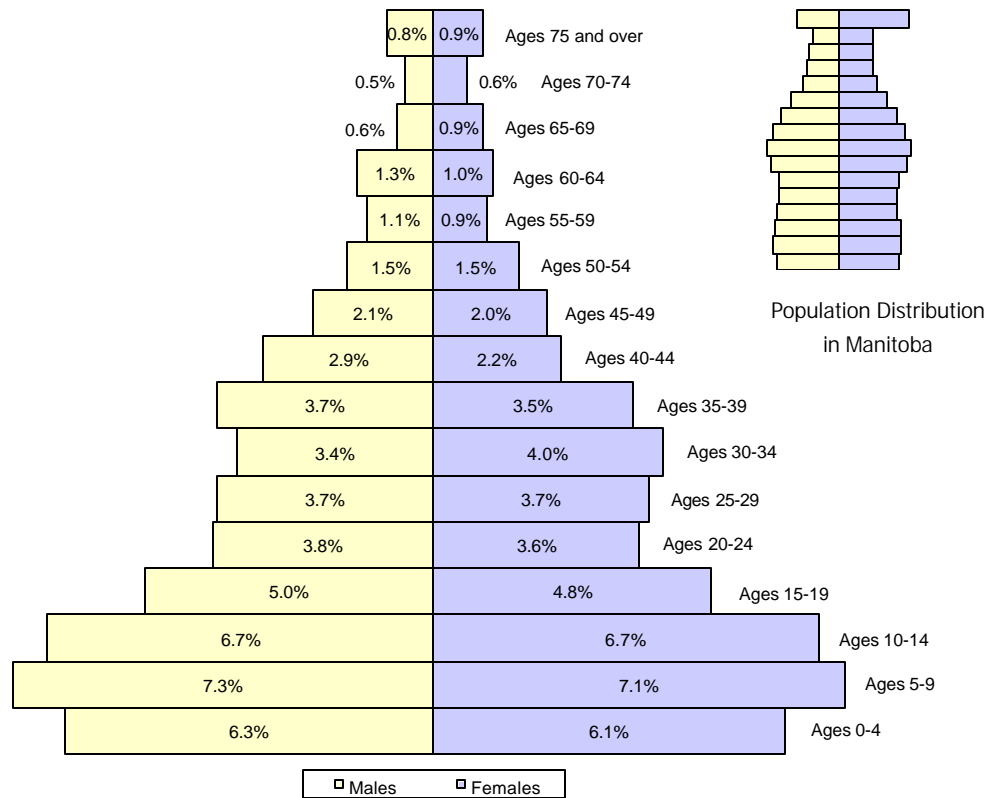
Sources:

1. Statistics Canada 1996 Census of Canada – 100% Data
2. Manitoba Health Population Report June 1, 2000

Notes:

1. Age and sex distribution data for PCN were only available for reserve parcels 19, 19A and 19E. The table above is a compilation of these data.
2. Population data are based on records of residents registered with Manitoba Health as of June 1st, 2000.
3. Column totals may not add due to Statistics Canada rounding.

Figure 3.31
Population Distribution by Age and Per cent of Total Population of
On-Reserve Males and Females for Pimicikamak Cree Nation: 2000



Source: Manitoba Health Report June 1, 2000

Note: Population data are based on records of residents registered with Manitoba Health as of June 1st, 2000.

Norway House Cree Nation

Like most other Project Region First Nation communities, Norway House Cree Nation had a relatively young on-reserve population in both 1996 and 2000. In each of these years, just less than 40 per cent of the population was 15 years of age or under. Conversely, only about ten per cent of the population was greater than 50 years of age in both years, compared to over 27 per cent provincially in 1996 (Manitoba Health 2000, Statistics Canada 1996).

Table 3.57
On-Reserve Age and Sex Distribution for Norway House: 1996 and 2000

Characteristics	Norway House First Nation					
	1996 Statistics Canada			2000 Manitoba Health Population Report		
	Total	Male	Female	Total	Male	Female
Total – All persons	3,400	1,730	1,670	3,493	1,746	1,747
Age 0-4	470 (13.8%)	230 (6.8%)	240 (7.1%)	385 (11.0%)	180 (5.2%)	205 (5.9%)
Age 5-9	470 (13.8%)	240 (7.1%)	230 (6.8%)	450 (12.9%)	226 (6.5%)	224 (6.4%)
Age 10-14	385 (11.3%)	200 (5.9%)	185 (5.4%)	417 (11.9%)	206 (5.9%)	211 (6.0%)
Age 15-19	300 (8.8%)	160 (4.7%)	140 (4.1%)	338 (9.7%)	168 (4.8%)	170 (4.9%)
Age 20-24	300 (8.8%)	160 (4.7%)	140 (4.1%)	291 (8.3%)	149 (4.3%)	142 (4.1%)
Age 25-29	325 (9.6%)	165 (4.9%)	160 (4.7%)	285 (8.2%)	141 (4.0%)	144 (4.1%)
Age 30-34	245 (7.2%)	125 (3.8%)	120 (3.5%)	285 (8.2%)	156 (4.5%)	129 (3.7%)
Age 35-39	210 (6.2%)	95 (2.8%)	115 (3.4%)	260 (7.4%)	126 (3.6%)	134 (3.8%)
Age 40-44	170 (5.0%)	90 (2.6%)	80 (2.4%)	198 (5.7%)	97 (2.8%)	101 (2.9%)
Age 45-49	145 (4.3%)	75 (2.2%)	70 (2.1%)	148 (4.2%)	74 (2.1%)	74 (2.1%)
Age 50-54	105 (3.1%)	55 (1.6%)	50 (1.5%)	123 (3.5%)	61 (1.7%)	62 (1.8%)
Age 55-59	85 (2.5%)	45 (1.3%)	40 (1.2%)	112 (3.2%)	62 (1.8%)	50 (1.4%)
Age 60-64	55 (1.6%)	30 (0.9%)	25 (0.7%)	79 (2.3%)	37 (1.1%)	42 (1.2%)
Age 65-69	35 (1.0%)	20 (0.6%)	15 (0.4%)	44 (1.3%)	24 (0.7%)	20 (0.6%)
Age 70-74	40 (1.1%)	20 (0.6%)	20 (0.6%)	35 (1.0%)	19 (0.5%)	16 (0.5%)
Age 75 or greater	55 (1.6%)	25 (0.6%)	30 (0.8%)	43 (1.2%)	20 (0.6%)	23 (0.7%)
Total population age 15 and over	2,085	1,065	1,005	2,241	1,134	1,107
Per cent of the total population ages 15 and over	61.3%	31.3%	29.6%	64.2%	32.5%	31.7%

Sources:

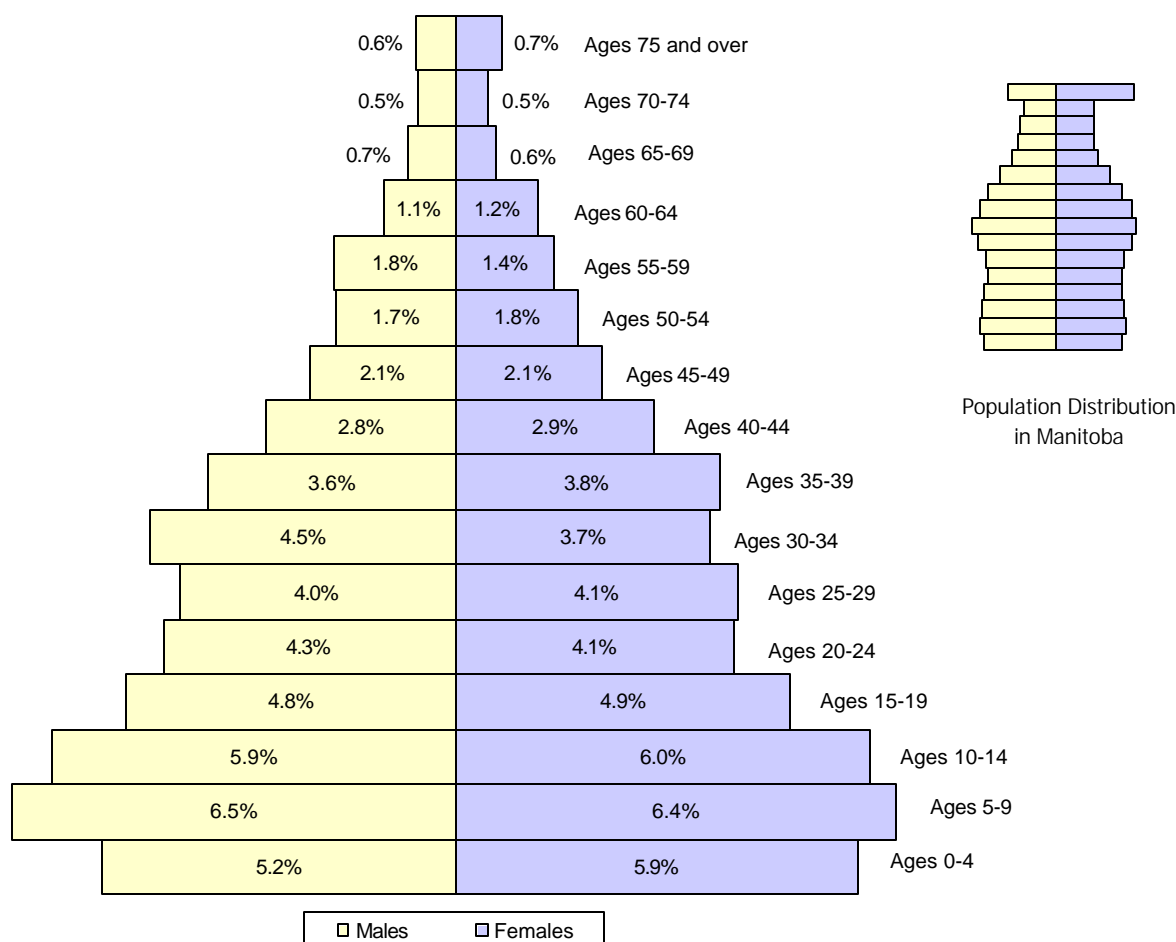
1. Statistics Canada 1996 Census of Canada – 100% Data
2. Manitoba Health Population Report June 1, 2000

Notes:

1. Population data are based on records of residents registered with Manitoba Health as of June 1st, 2000.
2. Column totals may not add due to Statistics Canada rounding.

Figure 3.32 below depicts the on-reserve population of Norway House Cree Nation by age and sex according to 2000 Manitoba health data. The 2000 provincial population distribution is also provided for comparison.

Figure 3.32
Population Distribution by Age and Per cent of Total Population of
On-Reserve Males and Females for Norway House: 2000



Source: Manitoba Health Population Report June 1, 2000

Note: Population data are based on records of residents registered with Manitoba Health as of June 1st, 2000.

3.2.1.1.2 Population Growth Rate

Annual population growth rates for First Nation communities in the Project Region were calculated for the period from 1995 to 2000 using Manitoba Health population data. Over this six-year period, five of the six First Nation communities experienced positive annual population growth rates among on-reserve members. [Table 3.58](#) below indicates that Fox Lake Cree Nation was the only Project Region First Nation community to experience a negative annual population growth rate of -0.4 per cent between 1995 and 2000. Norway House Cree Nation, on the other hand, experienced the most significant annual population growth rate of these communities at 4.5 per cent. The average annual population growth rate for these communities was 2.2 per cent. The provincial growth rate over this same time period (1995 to 2000) was 0.1 per cent (Manitoba Health 2000).

Table 3.58
Population Growth Rate for First Nation Communities
in the Project Region: 1995 to 2000

First Nation Community	Average Annual Population Growth Rate
Nisichawayasihk Cree Nation	2.0%
Tataskweyak Cree Nation	2.0%
War Lake Cree Nation	1.8%
York Factory First Nation	2.7%
Fox Lake Cree Nation	-0.4%
Pimicikamak Cree Nation	2.5%
Norway House Cree Nation	4.5%
Average for Project Region First Nation Communities	2.2%
Provincial Average	0.1%

Source: Manitoba Health Population Report June 1, 2000

Note: Population data are based on records of residents registered with Manitoba Health as of June 1st, 2000.

3.2.1.2 Economy

The following outlines general economic characteristics for First Nation communities in the Project Region, including:

- Employment Characteristics of Residents
- Income
- Education and Training, and

All of the data are for on-reserve populations.

3.2.1.2.1 Employment Characteristics of Residents

Employment and unemployment data for First Nation communities in the Project Region were taken from the 1996 Census of Canada and in the case of potential labour force, 2000 Manitoba Health data is also included. Data are provided for each of the communities in the areas of potential labour force, active labour force, participation rate, employment and unemployment.

The Potential Labour Force

Table 3.59 below outlines the potential labour force for each First Nation community in the Project Region based on 1996 Statistics Canada and 2000 Manitoba Health data. Potential labour force is defined by Statistics Canada as all persons over the age of 15.

Table 3.59
Potential Labour Force for First Nation Communities
in the Project Region: 1996 and 2000

First Nation Community	Potential Labour Force	
	1996 Statistics Canada	2000 Manitoba Health
NCN	1,075	1,289
TCN	930	792
War Lake	105	47
York Factory	200	189
Fox Lake	110	167
PCN	2,070	1,784
Norway House	2,065	2,241
Total	6,555	6,509

Sources:

1. Statistics Canada 1996 Census of Canada – 20% Data.
2. Manitoba Health Population Report June 1, 2000.

The Active Labour Force

The active labour force is defined by Statistics Canada as the number of people in the total labour force who were either employed or unemployed during the week prior to the Census Day. Typically those persons not considered to be part of the active labour force include students, homemakers, retired workers, seasonal workers in an “off-season” who are not looking for work and persons who cannot work because of a long-term disability or illness (Statistics Canada 1996).

Table 3.60 below displays the active labour force for each First Nation community on the Project Region. Norway House Cree Nation had the largest active labour force (1,020 people), followed by PCN (910 people), NCN (465 people) and TCN (460 people). Other First Nation communities in the Project Region had substantially smaller active labour forces in 1996 (Statistics Canada 1996).

Table 3.60
Active Labour Force for First Nation Communities in the Project Region: 1996

First Nation Community	Active Labour Force
NCN	465
TCN	460
War Lake	65
York Factory	110
Fox Lake	60
PCN	910
Norway House	1,020
Total	3,090

Source: Statistics Canada 1996 Census of Canada – 20% Data.

Another indication of involvement in the labour force is participation rate. Participation rate can be determined by finding the proportion of the population over the age of 15 that are in the active labour force. Table 3.61 below indicates that the average participation rate for First Nation communities in the Project Region was 47 per cent in 1996. PCN and NCN had the lowest participation rates at 44 per cent, while War Lake had the highest participation rate at about 62 per cent. In 1996, the provincial participation rate was about 66 per cent (Statistics Canada 1996).

Table 3.61
Participation Rate for First Nation Communities in the Project Region: 1996

First Nation Community	Participation Rate
NCN	43.5%
TCN	49.5%
War Lake	61.9%
York Factory	55.0%
Fox Lake	54.5%
PCN	44.3%
Norway House	49.4%
Average Participation Rate Among Project Region First Nation Communities	47.2 %
Manitoba Participation Rate	65.5%

Source: Statistics Canada 1996 Census of Canada – 20% Data

Employment

Generally, employment rates for First Nation communities in the Project Region were relatively low in 1996. Individuals considered to be employed work for pay or are self-employed on either a part-time or full-time basis. Among First Nation communities in the Project Region, York Factory First Nation had the highest employment rate at 86 per cent, while TCN had the lowest at 51 per cent. For comparison, the provincial employment rate in 1996 was about 90 per cent (Statistics Canada 1996).

Table 3.62
Employment Rate for First Nation Communities in the Project Region: 1996

First Nation Community	Percentage Employed
NCN	54.8%
TCN	51.1%
War Lake	76.9%
York Factory	86.4%
Fox Lake	66.7%
PCN	71.6%
Norway House	69.6%
Average Employment Rate for Project Region First Nation Communities	65.4%
Provincial Employment Rate	89.9%

Source: Statistics Canada 1996 Census of Canada – 20% Data.

Table 3.63 below depicts employment by industry division for the First Nation communities in the Project Region based on 1996 Census of Canada data. In general, Government Services were the largest source of employment. Educational and Health and Social Service industries were also important employers for Project Region First Nation communities.

Table 3.63
Employment Statistics by Industry Division as of January 15, 1995

Industry Characteristics	First Nation Communities (population age 15 and over who have worked since January 1, 1995)						
	NCN	TCN	War Lake	York Factory	Fox Lake	PCN	Norway House
Total – All industries	335	335	60	110	55	785	890
Agricultural and related service industries	0%	0%	0%	0%	0%	0%	1%
Fishing and trapping industries	0%	3%	0%	0%	0%	1%	3%
Logging and forestry industries	8%	0%	0%	0%	0%	0%	2%
Manufacturing industries	0%	0%	0%	0%	0%	1%	1%
Construction industries	9%	15%	0%	9%	18%	13%	9%
Transportation and storage industries	5%	3%	0%	9%	0%	1%	2%
Communication and other utility industries	5%	4%	0%	0%	0%	7%	6%
Retail trade industries	8%	9%	0%	9%	0%	14%	10%
Business service industries	0%	3%	0%	9%	0%	0%	1%
Government service industries	27%	27%	33%	32%	45%	19%	18%
Educational service industries	18%	18%	17%	9%	0%	20%	17%
Health and social service industries	18%	16%	25%	14%	0%	12%	20%
Accommodation, food and beverage service industries	3%	0%	0%	0%	18%	6%	8%
Other service industries	0%	3%	0%	9%	0%	4%	3%

Source: Statistics Canada 1996 Census of Canada - 20% Data.

Note: Percentages may not add up to 100% due to rounding of these figures.

Unemployment

Unemployment is determined by calculating the percentage of people in the active labour force that are not employed but are currently looking for work. Based on 1996 Census of Canada data, the average unemployment rate for the six First Nation communities in the Project Region was 34.1 per cent. This was over three times the provincial unemployment rate of 10.1 per cent in 1996. York Factory had the lowest unemployment rate at about 14 per cent, while TCN had the highest unemployment rate at about 49 per cent (Statistics Canada 1996).

Table 3.64
Unemployment Rate for First Nation Communities in the Project Region: 1996

First Nation Community	Percentage Unemployed
NCN	45.2%
TCN	48.9%
War Lake	23.1%
York Factory	13.6%
Fox Lake	33.3%
PCN	28.4%
Norway House	30.4%
Average Unemployment Rate for Project Region First Nation Communities	34.1%
Provincial Unemployment Rate - 1996	10.1%

Source: Statistics Canada 1996 Census of Canada – 20% Data.

3.2.1.2.2 Income Levels and Sources

The most recent income data available are from the 1996 Census of Canada. The following three sections outline personal income, family income and household income for each of the First Nation communities in the Project Region. Income data were not available for Fox Lake and War Lake because of their small population sizes.

Personal Income

Annual personal income is the average annual income earned per person. In 1996, the average annual personal income for First Nation communities in the Project Region was approximately \$11,777. TCN had the lowest personal income at approximately \$10,513, and PCN had the highest at approximately \$12,655 in 1996. The provincial average annual personal income in 1996 was approximately \$25,196, which was more than double the average for Project Region First Nation communities (Statistics Canada 1996).

Table 3.65
Average Personal Income and Distribution of Income: 1996

Personal Income (\$\$)	Percentage of total individuals				
	First Nation Communities				
	NCN	TCN	York Factory	PCN	Norway House
Total number of individuals	1,000	860	195	1,655	1,925
Under \$10,000	59%	63%	54%	55%	56%
\$10,000 - \$19,999	22%	19%	26%	24%	25%
\$20,000 - \$29,999	10%	9%	13%	11%	12%
\$30,000 - \$39,999	5%	4%	5%	5%	5%
\$40,000 - \$49,999	3%	2%	0%	4%	2%
\$50,000 - \$59,999	1%	1%	0%	1%	1%
\$60,000 and over	0%	1%	0%	1%	1%
Average Personal Income:	\$11,621	\$10,513	\$11,048	\$12,655	\$11,742
Average Personal Income of Project Region First Nations	\$11,777				
Provincial Average Personal Income	\$25,196				

Source: Statistics Canada 1996 Census of Canada – 20% Data

Note: Incomes reported are before taxes.

Family Income

Annual family income is defined as the amount of income earned by a family, where family is defined as a married or common-law couple living together, with or without never-married sons or daughters; or a lone parent living with at least one-never married son or daughter (Statistics Canada 1996).

In 1996, the average annual family income for First Nation communities in the Project Region was approximately \$29,359, with about 50 per cent of families earning incomes between \$10,000 and \$30,000. NCN had the lowest average family income at approximately \$27,295 per annum, and PCN had the highest average family income at approximately \$32,079 per annum. In 1996, the average annual family income in Manitoba was approximately \$43,091, which was almost 50% greater than the average family income for Project Region First Nation communities (Statistics Canada 1996).

Table 3.66
Average Family Income and Distribution of Income: 1996

Family Income (\$\$)	Percentage of total families				
	First Nation Communities				
	NCN	TCN	York Factory	PCN	Norway House
Total number of families	350	285	75	655	710
Under \$10,000	13%	14%	13%	10%	9%
\$10,000 - \$19,999	33%	32%	27%	26%	30%
\$20,000 - \$29,999	26%	21%	27%	21%	23%
\$30,000 - \$39,999	11%	14%	13%	15%	16%
\$40,000 - \$49,999	7%	9%	0%	11%	11%
\$50,000 - \$59,999	3%	7%	0%	8%	5%
\$60,000 - \$69,999	3%	4%	0%	3%	2%
\$70,000 - \$79,999	0%	0%	0%	3%	2%
\$80,000 - \$89,999	3%	4%	0%	0%	1%
\$90,000 - \$99,999	0%	0%	0%	2%	0%
\$100,000 and greater	0%	0%	0%	0%	1%
Average Family Income:	\$27,295	\$27,580	\$27,947	\$32,079	\$28,730
Average Family Income of Project Region First Nations	\$29,359				
Provincial Average Family Income	\$43,091				

Source: Statistics Canada 1996 Census of Canada – 20% Data

Note: Incomes reported are before taxes.

Household Income

Annual household income is defined as the amount of income earned by all persons living in the household (Statistics Canada 1996).

In 1996, the average annual household income for First Nation communities in the Project Region was \$31,723. TCN had the lowest average household income at approximately \$30,119 per annum, while PCN had the highest average household income at approximately \$32,516 per annum. In 1996, the average annual household income for the province was approximately \$43,404, which was about 40 per cent

greater than the average household income for Project Region First Nation communities (Statistics Canada 1996).

Table 3.67
Average Household Income and Distribution of Income: 1996

Household Income (\$\$)	Percentage of total households				
	First Nation Communities				
	NCN	TCN	Norway House	PCN	York Factory
Total number of households	365	295	715	760	75
Under \$10,000	7%	10%	8%	11%	13%
\$10,000 - \$19,999	23%	31%	23%	24%	27%
\$20,000 - \$29,999	32%	20%	25%	19%	20%
\$30,000 - \$39,999	15%	14%	16%	15%	20%
\$40,000 - \$49,999	10%	10%	14%	11%	13%
\$50,000 - \$59,999	5%	9%	7%	7%	13%
\$60,000 - \$69,999	5%	3%	3%	3%	13%
\$70,000 - \$79,999	0%	0%	3%	3%	0%
\$80,000 - \$89,999	3%	0%	1%	1%	0%
\$90,000 - \$99,999	0%	0%	1%	0%	0%
\$100,000 and greater	0%	0%	0%	1%	0%
Average Household Income:	\$31,742	\$30,119	\$31,677	\$32,516	\$30,342
Average Household Income of Project Region First Nations	\$31,723				
Provincial Average Household Income - 1996:	\$43,404				

Source: Statistics Canada 1996 Census of Canada – 20% Data

Note: Incomes reported are before taxes.

3.2.1.2.3 Education and Training

Residents in each of the First Nation communities in the Project Region had similar levels of schooling. In general, approximately a third of residents 15 years of age and older had less than a Grade 9 education, and approximately 10 per cent had some university education. In Manitoba, approximately 13 per cent of the population had less than a Grade 9 education in 1996, and nearly a quarter (23 per cent) had some university education in 1996 (Statistics Canada 1996).

Table 3.68
Highest Level of Education for First Nation Communities in the Project Region

Level of Education	Project Region First Nation Communities						
	NCN	TCN	War Lake	York Factory	Fox Lake	PCN	Norway House
Number of People 15 years or over	1,070	935	105	200	110	2,075	2,065
Less than Grade 9	34%	32%	29%	28%	41%	36%	28%
Grades 9 to 13:	43%	45%	48%	38%	36%	39%	49%
• Without Secondary School Graduation Certificate	37%	38%	43%	35%	32%	34%	43%
• With Secondary School Graduation Certificate	6%	7%	10%	5%	0%	5%	7%
Trades Certificate or Diploma	1%	4%	10%	5%	9%	1%	4%
Other Non-University Education Only	11%	10%	10%	25%	14%	13%	11%
• Without Certificate Or Diploma	5%	4%	0%	13%	0%	6%	4%
• With Certificate Or Diploma	7%	6%	0%	13%	9%	7%	7%
University:	12%	9%	14%	8%	9%	11%	8%
• Without Degree	8%	6%	9%	5%	9%	1%	5%
• With Bachelor's Degree or Higher	3%	3%	9%	0%	0%	4%	3%

Source: Statistics Canada 1996 Census of Canada – 20% Data

Notes:

1. Statistics for education levels at PCN were only available for reserve parcels 19, 19A and 19E.
2. The data used to determine education levels for War Lake were obtained from the 1996 Census of Canada data for what was then termed Ilford (Indian Settlement). The War Lake reserve had not yet been created in 1996, and this is the most reliable data set available to determine education levels within the War Lake Cree Nation.
3. Column totals may not add due to Statistics Canada rounding.

3.2.2 Town of Gillam

The following outlines relevant socio-economic characteristics for the Town of Gillam. Other incorporated communities in the Project Region, namely the The City of Thompson and the Local Government District (LGD) of Mystery Lake were discussed separately in Section 3.1 above.

3.2.2.1 Population of Gillam

Population data for the Town of Gillam were available in the Manitoba Health Population Reports and the 1996 Census of Canada.

3.2.2.1.1 Total Population

The most recent population data for Gillam are found in Manitoba Health's June 1, 2000 Population Report. Based on this report, the total population of Gillam was 1,526 people in 2000. The 1996 Census of Canada recorded the population of Gillam at 1,543 people in 1996.

Population Structure by Age and Sex

Both the 1996 Census of Canada and the 2000 Manitoba Health Report indicate that the Town of Gillam has a relatively young community (see [Table 3.69](#)). In 2000, almost one-third (32.8 per cent) of the population was below the age of 15, and only about three per cent of the population was over the age of 60. For comparison, in 2000, approximately 20 per cent of the total population of Manitoba was below 15 years of age, and almost 18 per cent were over the age of 60 (Manitoba Health 2000). [Table 3.69](#) below also indicates the large proportion of individuals in the 30 to 40 age bracket for the Town of Gillam.

Table 3.69
Age and Sex Distribution for the Town of Gillam: 1996 and 2000

Characteristics	Town of Gillam					
	1996 Statistics Canada			2000 Manitoba Health Population Report		
	Total	Male	Female	Total	Male	Female
Total – All persons	1,535	790	745	1,231	666	565
Age 0-4	200 (13.0%)	105 (6.8%)	95 (6.2%)	127 (10.3%)	73 (5.9%)	54 (4.4%)
Age 5-9	170 (11.1%)	75 (4.9%)	95 (6.2%)	159 (12.9%)	86 (7.0%)	73 (5.9%)
Age 10-14	155 (10.1%)	80 (5.2%)	75 (4.9%)	118 (9.6%)	62 (5.0%)	56 (4.5%)
Age 15-19	105 (6.8%)	60 (3.9%)	45 (2.9%)	94 (7.6%)	59 (4.8%)	35 (2.8%)
Age 20-24	60 (3.9%)	30 (2.0%)	30 (2.0%)	61 (5.0%)	33 (2.7%)	28 (2.3%)
Age 25-29	105 (6.8%)	45 (2.9%)	60 (3.9%)	72 (5.8%)	36 (2.9%)	36 (2.9%)
Age 30-34	225 (14.7%)	110 (7.2%)	115 (7.5%)	125 (10.1%)	62 (5.0%)	63 (5.1%)
Age 35-39	155 (10.1%)	75 (4.9%)	80 (5.2%)	140 (11.4%)	67 (5.4%)	73 (5.9%)
Age 40-44	130 (8.5%)	75 (4.9%)	55 (3.6%)	108 (8.8%)	54 (4.4%)	54 (4.4%)
Age 45-49	85 (5.5%)	50 (3.3%)	35 (2.3%)	87 (7.1%)	53 (4.3%)	34 (2.8%)
Age 50-54	65 (4.2%)	35 (2.3%)	30 (2.0%)	68 (5.5%)	36 (2.9%)	32 (2.6%)
Age 55-59	35 (2.3%)	20 (1.3%)	15 (1.0%)	33 (2.7%)	19 (1.5%)	14 (1.1%)
Age 60-64	20 (1.3%)	10 (0.7%)	10 (0.7%)	21 (1.7%)	13 (1.1%)	8 (0.6%)
Age 65-69	15 (1.0%)	10 (0.7%)	5 (0.3%)	9 (0.7%)	7 (0.6%)	2 (0.2%)
Age 70-74	5 (0.3%)	5 (0.3%)	0	6 (0.5%)	4 (0.3%)	2 (0.2%)
Age 75 or greater	0	0	0	3 (0.2%)	2 (0.2%)	1 (0.1%)
Total population age 15 and over	1,004	525	480	827	445	382
Per cent of the total population ages 15 and over	65.4%	34.2%	31.3%	67.2%	36.1%	31.0%

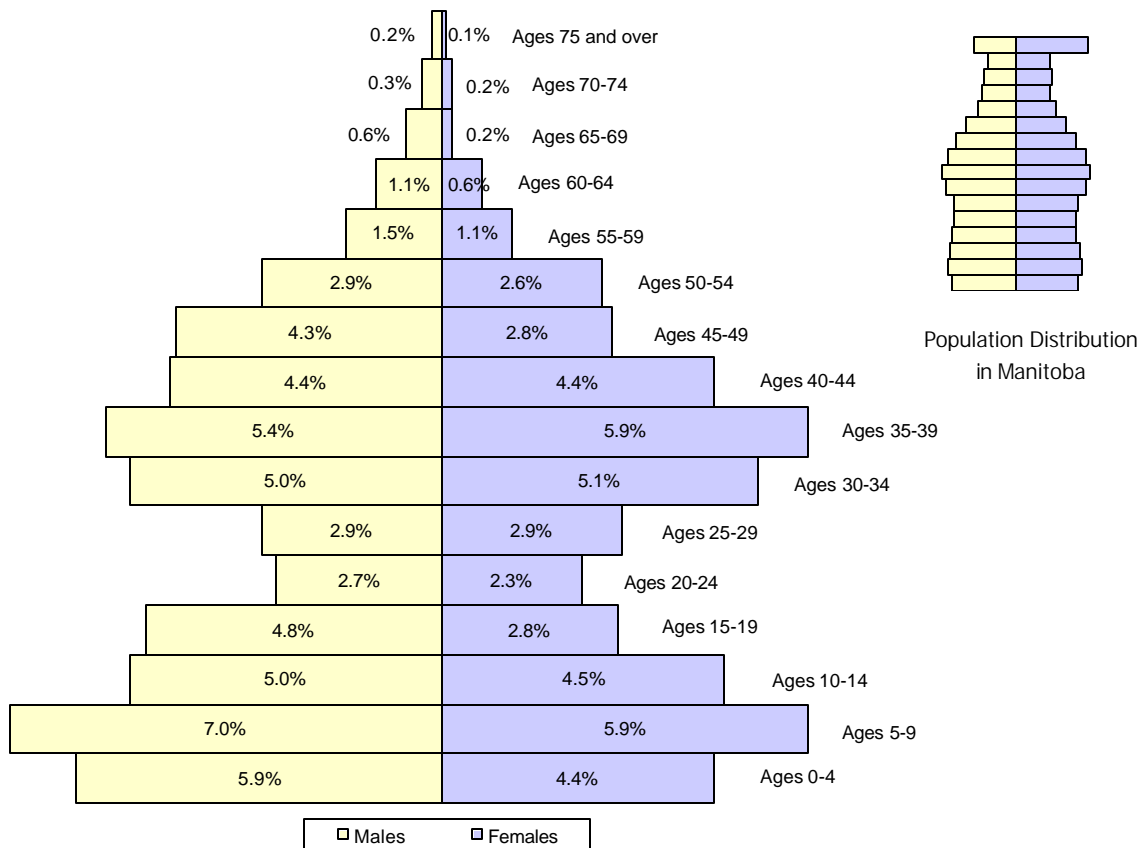
Sources:

1. Statistics Canada 1996 Census of Canada – 100% Data
2. Manitoba Health Population Report June 1, 2000

Note: Columns may not add due to rounding.

Figure 3.33 below indicates that in 2000 the population of the Town of Gillam, while relatively young (33 per cent less than 15 years of age) also had a high proportion of residents in the 30 to 44 age group (over 30 per cent of the total population). The proportion of people between the ages of 15 and 30 is significantly smaller with less than 20 per cent of the total population. Beyond the age of 55, all of the age classes become significantly smaller (Manitoba Health 2000).

Figure 3.33
Population Distribution by Age and Sex for the Town of Gillam: 2000



Source: Manitoba Health Population Report June 1, 2000

Note: Population data is based on records of residents registered with Manitoba Health as of June 1st, 2000.

3.2.2.1.2 Annual Population Growth Rate

The annual population growth rate for the Town of Gillam was calculated using Manitoba Health data. The growth rate was calculated for the period from 1995 to 2000. Over this six-year period, the population decreased from 1,526 people in 1995 to 1,231 people in 2000. This equated to an annual population growth rate of -4.2 per cent. The provincial growth rate for the same period (1995 to 2000) was 0.05 per cent (Manitoba Health 1999, 2000).

3.2.2.2 Economy

The following outlines general economic characteristics for the Town of Gillam, including:

- Employment Characteristics of Residents
- Income
- Education and Training, and
- Gillam's Business Sector.

3.2.2.2.1 *Employment Characteristics of Residents*

Data on employment characteristics of Gillam residents were taken from the 1996 Census of Canada and, in some cases, the June 1, 2000 Manitoba Health Population Report. Each characteristic is discussed, in turn, below.

The Potential Labour Force

In 1996, the potential labour force for the Town of Gillam was 1,005 individuals, this included all individuals over the age of 15 years, excluding institutional residents, as defined by Statistics Canada. The 2000 Manitoba Health Report placed the potential labour force (those 15 years and older) of Gillam at 827 people. It is most likely, however, that individuals between the ages of 15 and 64 actually serve in the potential labour force. The 1996 Census indicated there were 985 residents in this potential labour force age class (15 to 64) in 1996, while the 2000 Manitoba Health Population Report indicated there were 809 people in this age range in 2000.

The Active Labour Force

In 1996, Statistics Canada reported the active labour force for the Town of Gillam was 760 people. The active labour force is defined by Statistics Canada as the number of people in the total labour force who were either employed or unemployed during the week prior to the Census Day. Typically those persons not considered to be part of the active labour force include students, homemakers, retired workers, seasonal workers in an “off-season” who are not looking for work and persons who cannot work because of a long-term disability or illness (Statistics Canada 1996).

Another method of reporting the active labour force is the participation rate. The participation rate can be determined by finding the proportion of the population over the age of 15 that are in the active labour force. In 1996, the participation rate for Gillam was 75.6 per cent. This was significantly higher than the provincial participation rate, which was 65.5 per cent in 1996 (Statistics Canada 1996).

Employment

According to Statistics Canada, individuals considered to be employed are those in the active labour force who work for pay or are self-employed, on either a part-time or full-time basis. In 1996, the employment rate for Gillam was 89.5 per cent. This was very close to the provincial employment rate of 89.9 per cent in 1996 (Statistics Canada 1996).

In 1995, the main employer in Gillam was employment was Manitoba Hydro with communication and other utility industries accounting for more than 40 per cent of town's total employment. [Table 3.70](#) indicates that other important sources of employment were transportation and storage, government services, accommodation, food and beverage, health and social services, retail trade and educational services (Statistics Canada 1996).

Table 3.70
Employment Statistics by Industry Division for the Town of Gillam: January 15th, 1995

Industry Division	Number / Percentage
Total – All industries	745
Construction industries	20 (3%)
Transportation and storage industries	55 (8%)
Communication and other utility industries	315 (43%)
Retail trade industries	55 (8%)
Real estate operator and insurance agent industries	10 (1%)
Business service industries	10 (1%)
Government service industries	45 (6%)
Educational service industries	65 (9%)
Health and social services industries	70 (10%)
Accommodation, food and beverage service industries	55 (8%)
Other service industries	30 (4%)

Source: Statistics Canada 1996 Census of Canada – 20% Data

Note: Column may not add due to Statistics Canada rounding.

Unemployment

Unemployment is determined by calculating the percentage of people in the active labour force that are not employed but are currently looking for work. According to the 1996 Census of Canada, the average unemployment rate for Gillam was 10.5 per cent. This was only slightly higher than the provincial unemployment rate in 1996 of 10.1 per cent (Statistics Canada 1996).

3.2.2.2.2 Income

The most recent income data available for the Town of Gillam were from the 1996 Census of Canada. Data on personal income, family income and household income are outlined below.

Personal Income

Annual personal income is the average annual income earned per person. In 1996, the annual personal income for Gillam residents was approximately \$35,080. This was about 35 per cent more than the average annual personal income of \$22,667 seen provincially in 1996.

Table 3.71 below indicates that a large proportion of Gillam residents had relatively high personal incomes in 1996. A quarter (25 per cent) of Gillam residents earned \$60,000 or more annually in 1996, compared to only 4.4 per cent provincially (Statistics Canada 1996). On the other hand, nearly 30 per cent of Gillam residents earned less than \$10,000 annually in 1996, which closely compares to the 29 per cent of residents seen provincially (Statistics Canada 1996).

Table 3.71
Average Personal Income and Distribution of Income for the Town of Gillam: 1996

Personal Income (\$\$)	Percentage of total individuals	
	Gillam	Manitoba
Under \$10,000	29%	29%
\$10,000 - \$19,999	13%	26%
\$20,000 - \$29,999	8%	17%
\$30,000 - \$39,999	7%	12%
\$40,000 - \$49,999	9%	7%
\$50,000 - \$59,999	9%	4%
\$60,000 and over	25%	4%
Average Personal Income:	\$35,080	\$22,667

Source: Statistics Canada 1996 Census of Canada – 20% Data

Note: Columns may not add due to Statistics Canada rounding.

Family Income

Annual family income is defined as the amount of income earned by a family, where family is defined as a married or common-law couple living together, with or without never-married sons or daughters; or a lone parent living with at least one-never married son or daughter (Statistics Canada 1996).

In 1996, the average annual family income for Town of Gillam residents was approximately \$69,534. This was almost 30 per cent higher than the average annual family income in Manitoba, which was approximately \$50,263 in 1996. Nearly 20 per cent of Gillam families earned \$100,000 and greater in 1996, compared with less than seven per cent provincially (Statistics Canada 1996).

Table 3.72
Average Family Income and Distribution of Income for the Town of Gillam: 1996

Family Income (\$\$)	Percentage of total families	
	Gillam	Manitoba
Under \$10,000	5%	5%
\$10,000 - \$19,999	6%	11%
\$20,000 - \$29,999	4%	15%
\$30,000 - \$39,999	5%	14%
\$40,000 - \$49,999	5%	13%
\$50,000 - \$59,999	11%	12%
\$60,000 - \$69,999	11%	9%
\$70,000 - \$79,999	15%	7%
\$80,000 - \$89,999	13%	5%
\$90,000 - \$99,999	10%	3%
\$100,000 and greater	18%	7%
Average Family Income:	\$69,534	\$50,263

Source: Statistics Canada 1996 Census of Canada – 20% Data

Note: Columns may not add due to Statistics Canada rounding.

Household Income

Annual household income is defined as the amount of income earned by all persons living in the household (Statistics Canada 1996).

In 1996, the average annual household income for the Town of Gillam was approximately \$65,106. This was about one-third higher than the provincial average annual household income, which was approximately \$43,404 in 1996 (Statistics Canada 1996).

Table 3.73
Average Household Income and Distribution of Income for Town of Gillam: 1996

Household Income (\$\$)	Percentage of Total Households	
	Gillam	Manitoba
Under \$10,000	7%	8%
\$10,000 - \$19,999	6%	19%
\$20,000 - \$29,999	5%	15%
\$30,000 - \$39,999	5%	14%
\$40,000 - \$49,999	6%	12%
\$50,000 - \$59,999	12%	10%
\$60,000 - \$69,999	12%	7%
\$70,000 - \$79,999	13%	5%
\$80,000 - \$89,999	9%	4%
\$90,000 - \$99,999	7%	2%
\$100,000 and greater	14%	5%
Average Household Income:	\$65,106	\$43,404

Source: Statistics Canada 1996 Census of Canada – 20% Data

Note: Columns may not add due to Statistics Canada rounding.

3.2.2.2.3 Education and Training

In 1996, 8 per cent of Gillam residents greater than 15 years of age had less than a Grade 9 education, which was about 40 per cent less than the provincial average of approximately 13 per cent. Levels of university education for Gillam residents (20 per cent) were quite similar to the provincial average of 23 per cent in 1996. Approximately 3 per cent of Gillam residents had trades certificates or diplomas in 1996, which was the same as the provincial figure (Statistics Canada 1996).

Table 3.74
Highest Level of Education for the Town of Gillam: 1996

Level of Education	Percentage of Population	
	Gillam	Manitoba
Less than Grade 9	8%	13%
Grades 9 to 13:	37%	40%
• Without Secondary School Graduation Certificate	26%	29%
• With Secondary School Graduation Certificate	11%	11%
Trades Certificate or Diploma	3%	3%
Other Non-University Education Only	31%	21%
• Without Certificate Or Diploma	3%	5%
• With Certificate Or Diploma	28%	16%
University:	20%	23%
• Without Degree	12%	11%
• With Bachelor's Degree or Higher	8%	12%

Source: Statistics Canada 1996 Census of Canada – 20% Data

3.2.2.2.4 Gillam's Business Sector

Business sector information for Gillam was available through the Manitoba Intergovernmental Affairs' Northern Region Community Profiles (2000). Additional economic information was collected for Gillam during the 1996 Census of Canada.

There are three Manitoba Hydro generating stations in the vicinity of the Town of Gillam, which contribute a great deal to the business sector of Gillam. Manitoba Hydro is the largest employer in the community and helps to support a number of other business sectors (Statistics Canada 1996).

Gillam also acts as a retail and shopping centre. Air and truck transport bring in goods and supplies, and these are re-distributed to more remote outlying areas (Manitoba Intergovernmental Affairs 2000).

The tourism industry in the northern wilderness regions surrounding Gillam provides a number of benefits to the community. There are some lodges and fly-in outposts, which attract many hunters, fishermen and outdoor enthusiasts each year. Many of these travellers pass through Gillam on their way in or out of the wilderness, and many of the town's businesses capitalize on this opportunity by providing goods, supplies and accommodations (Manitoba Intergovernmental Affairs 2000).

3.2.3 Northern Affairs Communities

Northern Affairs communities located within the Project Region for the proposed Wuskwatim Generating Station include:

- Nelson House (already covered in the Local Region section)
- South Indian Lake
- Ilford (This community is covered with War Lake Cree Nation since almost the entire population became part of the First Nation when it was created in 1993.)
- Pikwitonei
- Thicket Portage
- Wabowden
- Cross Lake, and
- Norway House.

The most recent data available for these communities are from the 1998 Manitoba Northern Affairs Community Profiles and the 1996 Census of Canada. Much of the Statistics Canada data were only available for the Northern Affairs community of South Indian Lake due to its larger population base.

3.2.3.1 Population

3.2.3.1.1 Total Population

Table 3.75 below outlines the populations for each Northern Affairs community in the Project Region based on 1996 Census of Canada data. As of 1996, South Indian Lake had the largest population, among these communities, at 887 residents. Thicket Portage, at 42 residents, had the smallest population among these communities (Statistics Canada 1996).

Table 3.75
Total Populations for Northern Affairs Communities in the Project Region: 1996

Northern Affairs Community	1996 Total Population
Nelson House	77
South Indian Lake	887
Pikwitonei	140
Thicket Portage	204
Wabowden	563
Cross Lake	412
Norway House	575
Total	2,858

Source: Manitoba Aboriginal and Northern Affairs Community Profiles 1998

More detailed population information was only available for the Local Region Northern Affairs community of South Indian Lake and is provided in Section 2.1.3.

3.2.3.1.2 Annual Average Population Growth Rate

Population growth rates for Northern Affairs communities in the Project Region were calculated over the period from 1991 to 1996 using Statistics Canada data. Table 3.77 indicates that, over this six-year period, five of the six Northern Affairs communities in the Project Region experienced positive annual population growth rates. Only Thicket Portage (-4.2%) and Nelson House (-0.3%) experienced a negative annual average population growth rate. South Indian Lake experienced the most significant population increase, with a 3.9 per cent annual average growth rate over this six-year period. The average annual population growth rate among these communities was 2.1 per cent. The provincial growth rate over this same time period (1991 to 1996) was significantly lower at 0.4 per cent (Statistics Canada 1996).

Table 3.77
Annual Average Population Growth Rate for Northern Affairs Communities
in the Project Region: 1996

Northern Affairs Community	Annual Average Population Growth Rate
Nelson House	-0.3%
South Indian Lake	3.9%
Pikwitonei	2.3%
Thicket Portage	- 4.2%
Wabowden	0.6%
Cross Lake	0.5%
Norway House	2.5%
Average Annual Population Growth Rate	2.1%
Provincial Average	0.4%

Source: Statistics Canada 1996 Census of Canada – 100% Data

3.2.3.2 Economy

Detailed information on labour force characteristics and income levels and sources were only available for the Northern Affairs community of South Indian Lake in the Local Region. This information is presented in Section 2.2.1.1

The following outlines general information on the business sector in each of the Project Region Northern Affairs communities, to the extent available. Business sector information was available in the 1998 Manitoba Northern Affairs Community Profiles produced by the Government of Manitoba for all of the Northern Affairs communities in the Project Region.

- **South Indian Lake:** The most important economic activity in South Indian Lake is commercial fishing. Fishermen deliver their catch to the Leaf Rapids fish station. Trapping contributes some additional income (Manitoba Northern Affairs Community Profiles 1998).
- **Pikwitonei:** Trapping and fishing are both vital economic activities in Pikwitonei. Commercial fishermen harvest on six nearby lakes and deliver their catch to the Wabowden fish station. The area surrounding Pikwitonei is suitable for recreation, as well as forestry development. Pockets of

clay soil with agricultural potential are found in the area, and wild rice has been planted in some nearby locations (Manitoba Northern Affairs Community Profiles 1998).

Tolko has renewed activity in the Pikwitonei and Thicket Portage areas since 1996. Highway construction and reforestation activities have also contributed to the economies of these communities (Mystery Net Project 1999).

- **Thicket Portage:** Fishing and trapping are the primary activities supplemented by seasonal employment on the CNR line and in local services. Wild rice has also been planted in some nearby lakes.

Thicket Portage is adjacent to the Wabowden-Thompson Nickel Belt and is in an area suitable for both forestry and tourism development (Manitoba Northern Affairs Community Profiles 1998).

- **Wabowden:** Wabowden is located in the southern part of Manitoba's nickel belt. A number of ore bodies are known to exist near the community. Manbridge Nickel Mines operated from 1970 to 1976 near the community.

In 1972 a logging operation was started at Sipiwesk, about 16 kilometres west of Wabowden. The timber harvest has become Wabowden's most important industry and it supplies the Tolko processing plant in The Pas.

Wabowden is also situated in the "Wabowden Clay Belt," an agricultural zone with some potential for agricultural applications. An agriculture research station operated from 1956 to 1965 in the community to assess soil fertility and plant adaptability in midnorthern Manitoba.

Commercial fishing continues to be one of the major sources of employment in Wabowden. The Wabowden fish station, located in the community, serves the communities of Wabowden, Thicket Portage and Cross Lake. The area connection with the Freshwater Fish Marketing Corporation provides valuable facilities and creates seasonal employment.

Trappers in the Wabowden RTL zone produce additional income for the community economy, and wild rice is another growing economic activity in the area (Manitoba Northern Affairs Community Profiles 1998).

- **Cross Lake:** Economic activities in Cross Lake include fishing, trapping and local services. Fishermen from Cross Lake, Walker Lake, and Pipestone Lake deliver their fish catch to the Wabowden fish station. Trappers have traplines in the Cross Lake RTL zone.

Small deposits of lithium and copper are known in the immediate area, but currently are not economically recoverable. Forest resources are substantial, and there is some potential for market development. Wild rice has been planted in shallow parts of some nearby lakes (Manitoba Northern Affairs Community Profiles 1998).

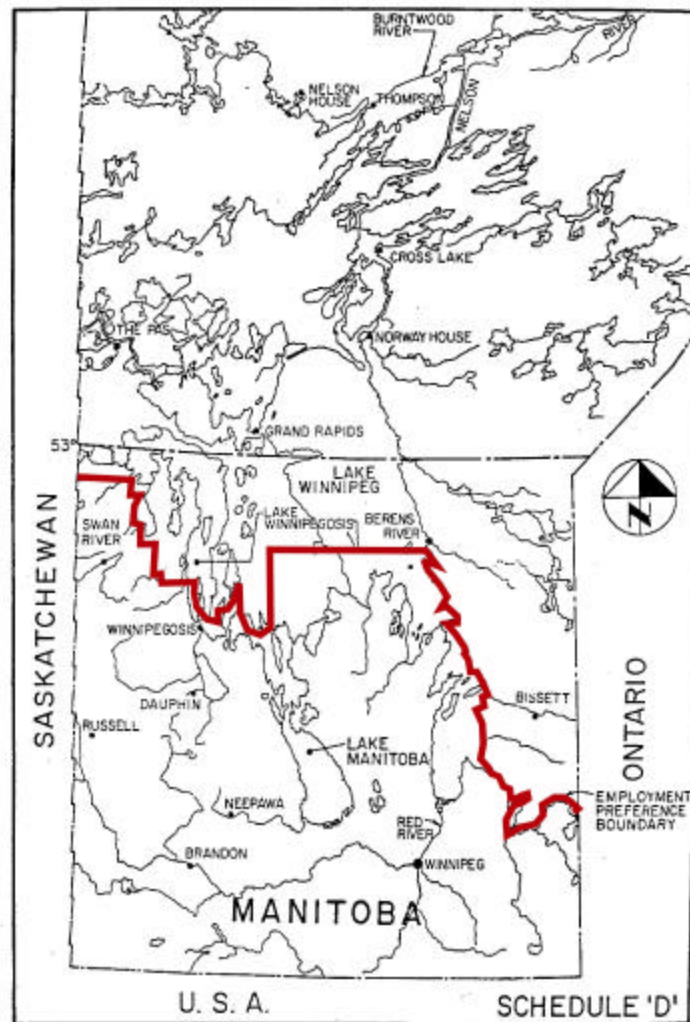
- **Norway House:** The terrain around Norway House currently limits economic opportunities. The terrain is primarily a granite base with little or no soil cover. Large areas are marshy and there are many small creeks, streams and rivers. Several small lakes lie in the nearby area, and much of the waterways are dotted with islands.

Commercial fishing is conducted throughout the year. Fishermen deliver their catch to the Playgreen Point and Tait Island fish stations. Wild rice has been seeded in shallow lakes east of Norway House. Other factors in the economy are trapping, which occurs in the Norway House RTL zone, and providing local services. Continuing its history as a regional centre, Norway House is also a transportation centre with air carriers flying in all directions (Manitoba Northern Affairs Community Profiles 1998).

4.0 NORTHERN REGION

For the purpose of this study, the Northern Region has been defined as the portion of northern Manitoba that extends as far south as the Northern Employment Preference under the current Burntwood Nelson Agreement (BNA). (The BNA is a collective agreements that set out employment conditions, including hiring preference for northern Aboriginals and northern residents, for construction of the Limestone Generating Station on the Nelson River.) The Northern Region includes, “ ... that part of Manitoba encompassed by Census Division 16 and that part of Census Division 19 north of the Winnipeg River, based on the 1971 Census as prepared by Statistics Canada” (BNA 1989). Census boundaries changed in 1996, with 1971 Census Division 16 and that part of the 1971 Census Division 19 north of the Winnipeg River becoming Census Divisions 19, 21, 22 and 23 (See Figure 4.1).

Figure 4.1
Map of the Northern Region



4.1 POPULATION

4.1.1 Total Population

According to the 1996 Census of Canada, the population of the Northern Region was 83,135 people in 1996. Of this population, 63 per cent, or 52,4000 people, were Aboriginal (Statistics Canada 1996).

4.1.1.1 Population Structure by Age and Sex

Table 4.1 and [Figure 3.2](#) below are based on 1996 Census of Canada age and sex data for the Northern population. The data indicate that in 1996 the Northern Region had a relatively young population. At this time, one-third (33.3 per cent) of the population was below the age of 15, and only about six per cent of the population was over the age of 60. For comparison, in 1996, approximately 12 per cent of the total population of Manitoba were below 15 years of age, and almost 18 per cent were over the age of 60 (Statistics Canada 1996).

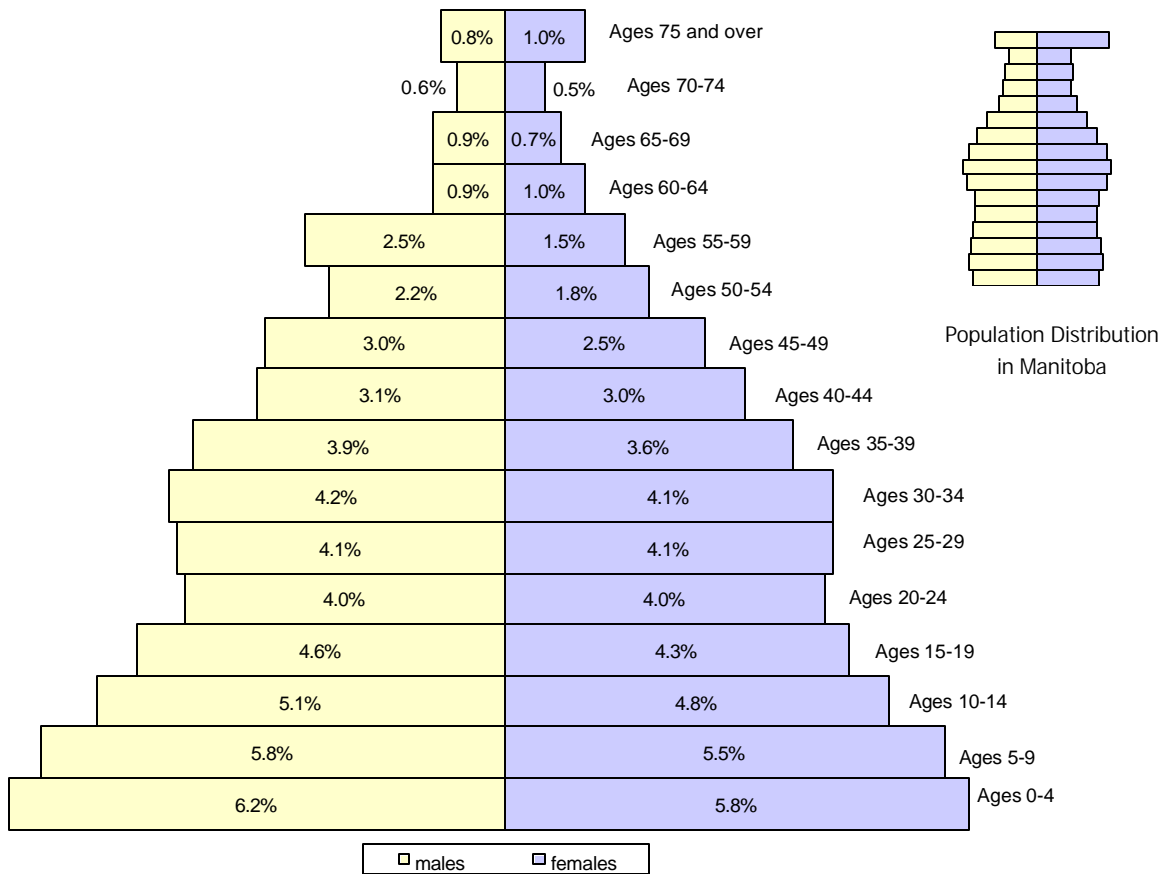
Table 4.1
Age and Sex Distribution for the Northern Region: 1996

Characteristics	Northern Region		
	Total	Male	Female
Total – All persons	83,135	42,825	40,315
Age 0-4	9,995 (12.0%)	5,145 (6.2%)	4,850 (5.8%)
Age 5-9	9,455 (11.4%)	4,845 (5.8%)	4,610 (5.5%)
Age 10-14	8,240 (9.9%)	4,255 (5.1%)	3,985 (4.8%)
Age 15-19	7,440 (8.9%)	3,830 (4.6%)	3,610 (4.3%)
Age 20-24	6,630 (8.0%)	3,320 (4.0%)	3,310 (4.0%)
Age 25-29	6,795 (8.2%)	3,415 (4.1%)	3,380 (4.1%)
Age 30-34	6,885 (8.3%)	3,475 (4.2%)	3,410 (4.1%)
Age 35-39	6,275 (7.5%)	3,275 (3.9%)	3,000 (3.6%)
Age 40-44	5,115 (6.2%)	2,615 (3.1%)	2,500 (3.0%)
Age 45-49	4,575 (5.5%)	2,490 (3.0%)	2,085 (2.5%)
Age 50-54	3,280 (3.9%)	1,790 (2.2%)	1,490 (1.8%)
Age 55-59	3,295 (4.0%)	2,080 (2.5%)	1,215 (1.5%)
Age 60-64	1,585 (1.9%)	715 (0.9%)	870 (1.0%)
Age 65-69	1,355 (1.6%)	715 (0.9%)	640 (0.7%)
Age 70-74	1,020 (1.2%)	525 (0.6%)	495 (0.6%)
Age 75 or greater	1,510 (1.8%)	660 (0.8%)	850 (1.0%)
Total population age 15 and over	55,760	28,905	26,855
Per cent of the total population ages 15 and over	67.1%	34.8%	32.3%

Source: Statistics Canada 1996 Census of Canada – 100% Data

Note: Columns may not add due to rounding.

Figure 4.2
Population Distribution by Age and Sex for the Northern Region: 1996



Source: Statistics Canada 1996 Census of Canada – 100% Data

4.1.2 Population Growth Rate

The annual population growth rate for the Northern Region was calculated using Statistics Canada population data from the 1991 Census of Canada and the 1996 Census of Canada. The annual growth rate was calculated for the period from 1991 to 1996. Over this six-year period, the population increased from 12,475 people to 14,722 people, representing an annual population growth rate for the Northern Region of 3.4 per cent. The annual provincial growth rate for the same period (1991 to 1996) was 0.4 per cent (Statistics Canada 1996).

4.2 ECONOMY

4.2.1 Overview of the Northern Region Economy

In general, service industries account for the greatest proportion of the employment in the North, while commodity industries and service industries are of equal importance throughout the whole of Manitoba. Collectively, however, primary industries and service industries have a higher share of the labour force in the North (60 per cent) than in the rest of Manitoba (52 per cent) (see Table 4.2). In particular, primary industries like mining, forestry, fishing and trapping are of higher importance to the Northern economy relative to the rest of Manitoba (Statistics Canada 1996).

Table 4.2
Types of Employment in Northern Manitoba and Manitoba as a Whole: 1996

Type of Employment	Northern Manitoba	Manitoba
Service Industries	47%	44%
Primary Industries	13%	8%
Commodity Industries (manufacturing & construction)	34%	46%

Source: Statistics Canada 1996

Note: Columns may not add due to rounding.

The North's significance to the provincial economy is governed primarily by past and potential future development of the major natural resources sectors. Mining, forestry and hydro-electric power are the three primary resource sectors in the North, and mostly supply markets external to the region.

The mining industry is the major employer in northern Manitoba providing approximately 4,500 jobs at an average salary of \$60,000 (Manitoba Intergovernmental Affairs 2001). The Manitoba minerals sector produces in excess of one billion dollars annually in total mineral production value. More than 90 per cent of Manitoba's metal mining value of production originated in the North. The mining sector provides significant wealth generation, export earnings, jobs, as well as materials needed to sustain industrial activity. The Manitoba minerals sector also has a high level of growth potential, and a number of incentives for further exploration and business growth. Exploration expenditures in 2000 were over \$27 million, and mining company spending intentions were in excess of \$30 million provincially in 2001 (Manitoba Industry, Trade and Mines 2002).

Manitoba has a successful forestry industry that produces a variety of wood products for local and export use. Manitoba's forestry industry is the fifth largest manufacturing sector in the province. In 1997, forestry contributed \$418 million in gross domestic product (GDP) to the provincial economy. Approximately 9,000 people are directly employed by the forestry industry. More than 60 per cent of Manitoba's forest harvest come from the North (Manitoba Conservation 2002).

Manitoba Hydro is a major energy utility and serves more than 485,000 customers throughout Manitoba. Almost all (about 95 per cent) of the electricity generated is from hydro-electric generating stations located primarily in northern Manitoba. Hydro's capital assets in service exceed \$8 billion, making it the fourth-largest energy utility in Canada. Manitoba Hydro employs more than 4,000 people throughout the province, and approximately 565 of these employees are located in the North. Hydro developments have played a major role in the development of the northern and provincial economies (Manitoba Hydro 2002).

Sport and commercial fishing provide another important contribution to the northern economy. In 2001, sport fishing mobilized more than 200,000 Manitobans and 35,000 visitors while injecting more than \$110 million into the provincial economy. Commercial fishing employs approximately 3,000 fishermen and support people mostly in northern Manitoba, and projects more than \$22.4 million in fish sales in the Province annually (Manitoba Intergovernmental Affairs 2001).

Northern service sectors include tourism, transportation, and other services like retail, financial and business service, as well as all levels of government. Tourism continues to expand in the North, and Churchill continues to be the largest attraction (Manitoba Intergovernmental Affairs 2001). Air, rail and road transportation are important sectors for the employment, access and development of northern communities. Other service sectors have been important for the development of the northern Manitoba economy, and collectively all service sectors constitute the primary type of employment in the North (Statistics Canada 1996).

4.2.2 Northern Region Economy

The following outline general economic characteristics for the Northern Region, including:

- Employment Characteristics of Residents
 - The Potential Labour Force
 - The Active Labour Force
 - Employment
 - Unemployment
- Income
 - Personal Income
 - Family Income
 - Household Income
- Education and Training, and
- The Business Sector.

4.2.2.1 Employment Characteristics of Residents

Data on the employment characteristics of Northern Region residents were taken from the 1996 Census of Canada. Each characteristic is discussed, in turn, below.

4.2.2.1.1 *The Potential Labour Force*

In 1996, the potential labour force for the Northern Region was 55,760 individuals. This included all individuals over the age of 15 years, excluding institutional residents, as defined by Statistics Canada.

4.2.2.1.2 *The Active Labour Force*

According to 1996 Census of Canada data, the active labour force for the Northern Region was 28,085 people in 1996. The active labour force is defined by Statistics Canada as the number of people in the total labour force who were either employed or unemployed during the week prior to the Census Day. Typically those persons not considered to be part of the active labour force include students, homemakers, retired workers, seasonal workers in an “off-season” who are not looking for work and persons who cannot work because of a long-term disability or illness (Statistics Canada 1996).

Another indication of involvement in the labour force is participation rate. Participation rate can be determined by finding the proportion of the population over the age of 15 that are in the active labour force. In 1996, the participation rate for the Northern Region was 59 per cent. This was slightly lower than the provincial participation rate, which was about 66 per cent in 1996 (Statistics Canada 1996).

4.2.2.1.3 *Employment*

According to Statistics Canada, individuals considered to be employed are those in the active labour force who work for pay, or are self-employed, on either a part-time or full-time basis. In 1996, the employment rate for the Northern Region was 84 per cent. This was slightly lower than the provincial employment rate of about 90 per cent in 1996 (Statistics Canada 1996).

As indicated in the Table 4.3 below, Health and Social Services and Government Service Industries were the largest employment sectors for the Northern Region in 1996, and accounted for nearly 25 per cent of the labour force. Retail Trade Industries, Educational Service Industries and Mining, Quarrying and Oil Well Industries employed an additional 30 per cent of the Northern Region labour force (Statistics Canada 1996).

Table 4.3
Labour Force by Industry Division for the Northern Region: 1996

Industry Divisions	Labour Force
Health and Social Services	12.1%
Government Service Industries	12.1%
Retail Trade Industries	10.7%
Educational Service Industries	10.6%
Mining, Quarrying and Oil Well Industries	9.2%
Manufacturing Industries	6.2%
Accommodation, Food and Beverage Services	6.0%
Construction Industries	5.0%
Transportation and Storage Industries	4.8%
Communication and Other Utilities	3.9%

Source: Statistics Canada 1996 Census of Canada – 20% Data

4.2.2.1.4 Unemployment

Unemployment is determined by calculating the percentage of people in the active labour force that are not employed but are currently looking for work. According to the 1996 Census of Canada data, the average unemployment rate for the Northern Region was 16.5 per cent. This was more than 50 per cent higher than the provincial unemployment rate in 1996 of 10.1 per cent (Statistics Canada 1996).

4.2.2.2 Income

The most recent income data available for the Northern Region are from the 1996 Census of Canada. The following three sections outline personal income, family income and household income.

4.2.2.2.1 Personal Income

Annual personal income is the average annual income earned per person. In 1996, the annual personal income for Northern Region residents was approximately \$19,952. This was about 10 per cent less than the average personal income of \$22,667 seen provincially in 1996 (Statistics Canada 1996).

Table 4.4 below indicates that a large proportion of Northern Region residents had relatively low personal incomes in 1996. According to the 1996 Census of Canada data, nearly 45 per cent of Northern Region residents earned under \$10,000 annually in 1996 compared with less than 30 per cent provincially. As well, less than 25 per cent of residents in the Northern Region earned more than \$30,000 annually in 1996, compared with about 28 per cent provincially (Statistics Canada 1996).

Table 4.4
Average Personal Income and Distribution of Income for the Northern Region: 1996

Personal Income (\$\$)	Percentage of total individuals	
	Northern Region	Manitoba
Under \$10,000	43.3%	29.1%
\$10,000 - \$19,999	21.1%	26.2%
\$20,000 - \$29,999	11.2%	17.1%
\$30,000 - \$39,999	7.3%	12.1%
\$40,000 - \$49,999	6.0%	6.9%
\$50,000 - \$59,999	4.3%	4.1%
\$60,000 and over	6.4%	4.4%
Average Personal Income:	\$19,952	\$22,667

Source: Statistics Canada 1996 Census of Canada – 20% Data

Note: Columns may not add due to rounding.

4.2.2.2.2 Family Income

Annual family income is defined as the amount of income earned by a family, where family is defined as a married or common-law couple living together, with or without never-married sons or daughters; or a lone parent living with at least one-never married son or daughter (Statistics Canada 1996).

As indicated in Table 4.5 below, average family income for Northern Region families was approximately \$40,369 per annum in 1996. This was about 20 per cent lower than the average annual family income in Manitoba, which was approximately \$50,263 in 1996. Nearly half (49 per cent) of Northern Region families earned \$30,000 per annum or less in 1996, compared with only 30 per cent provincially (Statistics Canada 1996).

Table 4.5
Average Family Income and Distribution of Income in the Northern Region: 1996

Family Income (\$\$)	Percentage of total families	
	Northern Region	Manitoba
Under \$10,000	11.1%	5.3%
\$10,000 - \$19,999	19.9%	10.5%
\$20,000 - \$29,999	17.5%	14.6%
\$30,000 - \$39,999	12.3%	14.4%
\$40,000 - \$49,999	9.3%	13.4%
\$50,000 - \$59,999	7.2%	12.0%
\$60,000 - \$69,999	6.0%	9.2%
\$70,000 - \$79,999	4.8%	6.6%
\$80,000 - \$89,999	3.3%	4.5%
\$90,000 - \$99,999	2.5%	3.0%
\$100,000 and greater	5.7%	6.7%
Average Family Income:	\$40,369	\$50,263

Source: Statistics Canada 1996 Census of Canada – 20% Data

Note: Columns may not add due to rounding.

4.2.2.2.3 Household Income

Annual household income is defined as the amount of income earned by all persons living in the household (Statistics Canada 1996).

Table 4.6 below indicates that average household income for the Northern Region was approximately \$41,987 per annum in 1996. This was only slightly less than the provincial average annual household income, which was approximately \$43,404 in 1996 (Statistics Canada 1996).

Table 4.6
Average Household Income and Distribution of Income in the Northern Region: 1996

Household Income (\$\$)	Percentage of Total Households	
	Northern Region	Manitoba
Under \$10,000	11.5%	7.8%
\$10,000 - \$19,999	19.7%	18.5%
\$20,000 - \$29,999	14.8%	15.3%
\$30,000 - \$39,999	11.2%	13.5%
\$40,000 - \$49,999	9.2%	11.5%
\$50,000 - \$59,999	8.5%	9.9%
\$60,000 - \$69,999	7.1%	7.2%
\$70,000 - \$79,999	5.2%	5.2%
\$80,000 - \$89,999	3.6%	3.5%
\$90,000 - \$99,999	2.7%	2.4%
\$100,000 and greater	6.0%	5.2%
Average Household Income:	\$41,987	\$43,404

Source: Statistics Canada 1996 Census of Canada – 20% Data

Note: Columns may not add due to rounding.

4.2.2.3 Education and Training

In 1996, 23 per cent of Northern Region residents 15 years of age or older had less than a Grade 9 education, which was almost 50 per cent higher than the provincial average of approximately 13 per cent. Levels of university education for Northern Region residents (14 per cent) were significantly lower than the provincial average of 23 per cent. Approximately 4 per cent of Northern Region residents had trades certificates or diplomas in 1996, which was about the same as the provincial figure (Statistics Canada 1996).

Table 4.7
Highest Level of Education among Northern Region Residents: 1996

Level of Education	Northern Region	Manitoba
Less than Grade 9	23%	13%
Grades 9 to 12:	42%	40%
• Without Secondary School Graduation Certificate	34%	29%
• With Secondary School Graduation Certificate	8%	11%
Trades Certification or Diploma	4%	3%
Other Non-University Education Only:	18%	21%
• Without Certificate Or Diploma	5%	5%
• With Certificate Or Diploma	13%	16%
University:	14%	23%
• Without Degree	8%	12%
• With Bachelor's Degree or Higher	6%	12%

Source: Statistics Canada 1996, Census of Canada

Notes:

1. Incomplete data: 20% sample data.
2. Totals may not add due to rounding.

4.2.3 The Business Sector

Business sector information for the Northern Region was available through the Manitoba Intergovernmental Affairs' Northern Region Community Profiles (2000). [Table 4.8](#) below indicates that Food and Beverages, Construction/Hardware, General Merchandise and Automotive business sectors were the most prevalent in the Northern Region in 2000. Together, these sectors accounted for two-thirds of the businesses in the Northern Region (Manitoba Intergovernmental Affairs 2000).

Table 4.8
Business, Trade and Professional Services in the Northern Region: 1996

Business, Trade and Professional Services	Number
Accommodations	65
Agricultural Services / Supplies	15
Automotive	128
Construction / Hardware	143
Financial	20
Food and Beverages	230
Furniture, Appliance / Home	54
General Merchandise	129
Other Services	78
Professional Services	49
Repair Services	43
Total	954

Source: Manitoba Intergovernmental Affairs 2000

5.0 MANITOBA AND CANADA

5.1 POPULATION

In 1996, the population of Manitoba was 1,113,898 individuals, or about 4 per cent of the total Canadian population of 28,846,760 individuals (Statistics Canada 1996).

5.2 EMPLOYMENT, PARTICIPATION AND UNEMPLOYMENT RATES

[Table 5.1](#) below provides labour force characteristics for Manitoba and Canada based on 1996 Census data. Based on these data, employment rates are slightly higher in Manitoba than they are for the country as a whole (92.1 per cent provincially versus 89.9 per cent federally). In both the province and Canada, employment is found primarily in manufacturing industries, retail trade industries and health and social services.

Table 5.1
Employment, Participation and Unemployment in the Labour Force for Manitoba and Canada:
1996

Characteristics ^{1,2}	Manitoba	Canada
The potential labour force ⁶	855,880	22,628,925
The active labour force ⁷	567,825	14,812,700
• Employed ⁸	523,210	13,318,740
• Unemployed ⁹	44,615	1,493,960
Persons not in the labour force	288,055	1,487,365
Participation rate	66.3%	65.5%
Employment rate	92.1%	89.9%
Unemployment rate	7.9%	10.1%

Source: Statistics Canada, 1996 Census of Canada

Notes:

1. Data incomplete: 20% sample data.
2. Totals may not add due to rounding.
3. Statistics Canada defines the potential labour force as all persons in a given population, excluding institutional residents, age 15 years and over.
4. The active labour force includes all persons 15 years of age and over, excluding institutional residents, who, during the week (Sunday to Saturday) prior to Census Day were either employed or unemployed.
5. The "employed" include all persons who "worked for pay or in self-employment" in the paid labour force in the week prior to enumeration. This includes all persons working for wages or salaries, all self-employed persons (with or without paid help) working in their own business, farm or professional practice, and all persons working without pay on a family farm or business during the reference week. The "employed" also include those persons absent from their job or business for the entire week because of vacation, illness, a labour dispute at their place of work or other reasons.
6. The classification of unemployed does not account for the underemployed, or those individuals working part time but desiring a full time position. As well, the classification does not include discouraged workers: those individuals who wish to work but have ceased looking because they do not believe they will find a job. Unemployment numbers may be understated for these reasons.

5.3 INCOME LEVELS

Table 5.2 below provides income characteristics for Manitoba and Canada based on the 1996 Census of Canada. In general, average incomes were slightly lower in Manitoba than for Canada as a whole.

Table 5.2
Average Annual Income Levels for the Northern Region: 1996

Income	Manitoba	Canada
Personal	\$22,667	\$25,196
Family	\$50,263	\$54,583
Household	\$43,404	\$48,552

Source: Statistics Canada, 1996 Census of Canada

5.4 EDUCATION AND TRAINING

Table 5.3 below highlights the highest levels of education for the Manitoban and Canadian populations based on 1996 Census of Canada data. The data indicate that, in general, the Canadian population has slightly higher levels of education than the provincial population.

Table 5.3
Highest Level of Education for Manitoba and Canada: 1996

Level of Education	Manitoba (Total = 855,880)	Canada (Total = 22,628,925)
Less than Grade 9	13%	12%
Grades 9 to 12:	40%	37%
- Without Secondary School Graduation Certificate	29%	23%
- With Secondary School Graduation Certificate	11%	14%
Trades Certification or Diploma	3%	4%
Other Non-University Education Only	21%	24%
- Without Certificate Or Diploma	5%	7%
- With Certificate Or Diploma	16%	18%
University:	23%	23%
- Without Degree	12%	10%
- With Bachelor's Degree or Higher	12%	13%

Source: Statistics Canada, 1996 Census of Canada

Notes:

1. Incomplete data: 20% sample data.
2. Totals may not add due to rounding.

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APPENDIX TWO

Wuskwatim Generation Station – SEIA

Nelson House KPI Program Interview Guide

1.0 NELSON HOUSE ECONOMY

1.1 GENERAL

1. How would you describe the Nelson House economy today?
2. Overall, would you say that the economy is in a state of growth or decline?
3. How do you see the Nelson House economy developing over the next 10 years?
4. Other than the proposed Wuskwatim project, are you aware of any major development projects proposed or planned in the community within the next ten years? If yes, could you describe those projects?
5. What do you feel are the major factors influencing economic activity in Nelson House?
6. What would you say were the most important economic events that occurred in Nelson House's history? Could you describe those events and their impact on Nelson House's:
 - economy
 - labour force (for example, an increase in training, shortage of workers, in-migration to augment the local labour force)
 - community functioning?

****If not specifically mentioned, probe about the impact of the Nelson House road and NFA settlement funds (NCN Trust and O.T. Trust).

1.2 THE BUSINESS SECTOR

1. Over the last ten years, what types of changes have taken place in the business sector in Nelson House?
 - *If not addressed in the response, probe for any changes in:
 - the number of businesses
 - types of businesses
 - scale of activity.
2. Who are currently the main actors in the business sector in Nelson House
 - What types of work do these firms do?
 - Are you familiar with the size of these firms?

- Do you know if these firms are looking for, or could take on, additional work?
3. What proportion of Nelson House businesses are privately-owned - that is, not owned by NCN itself? Is this more than in the past?
 - Does this include “informal” businesses like, for example, convenience stores, hairdressers, mechanics?
 - What can you tell us about these types of businesses? For instance, how many are there, what types of business do they do and, in general, how many employees do they have?
 4. Are you aware of any incentives, or aid packages, available to new businesses starting up in the community?
 5. Have any of the businesses in Nelson House had previous experience with large-scale industrial projects? If yes, explain.
 6. What types of barriers exist to Nelson House firms bidding on large-scale industrial contracts?
 7. Can you identify any gaps in the goods and services currently provided by businesses operating in the community? Explain.
 8. (*We will ask Leonard Linklater to put this information together in advance.*) Could you provide a listing of businesses operating in Nelson House?
 - What they do.
 - Number of employees.
 - Who owns them (private or NCN-owned)
 - Infrastructure, machinery etc.

1.3 EMPLOYMENT AND THE LABOUR FORCE

1. Who are the major employers in Nelson House? Has this changed in the last 15 years?
2. Would you say there are more or less job opportunities available in Nelson House now than in the past?
3. Do you feel that the types of employment opportunities are different now than in the past? If yes, how are they different?
4. In the next 10 to 15 years, do you think there will be more or less job opportunities available in the community? Why?

If more, what types of new jobs do you think will be available?

5. Could you describe any trends you have observed over the past 15 years in the skill level of the local labour force? Can you identify any areas where training is needed in the current labour force?
6. Have there been changes in the last 15 years in the types of wages and income people make working in Nelson House? What types of changes do you expect in the next 10-15 years?

1.4 SPECIFIC QUESTIONS FOR EACH BUSINESS OPERATOR

1. What type of work does your business do?
2. How long have you been in business?
3. Since going into business, would you say your business has been fairly steady? Or, has it increased or declined.
 - *If business has increased or declined* – What factors do you think lead to that change?
4. How many employees do you currently have? Is this more or less than in the past?
5. Are you satisfied with the amount of business you currently do? Would you like to take on more business?
6. Do you have any plans to expand your business in the future?
7. On annual basis, how much business do you typically do – less than \$15,000, \$15,000 to \$50,000, greater than \$50,000?

2.0 BUILT ENVIRONMENT AND COMMUNITY SERVICES

3.0 PERSONAL, FAMILY AND COMMUNITY LIFE

3.1 COMMUNITY HEALTH

General Questions

1. How would you describe the community's health today? Overall would you say that the health of Nelson House is improving or getting worse?
2. Are there any significant trends that have occurred in the past 15 years?
3. How do you see the health of Nelson House changing over the next ten years? What kind of health issues do you see as getting worse and/or getting better?

4. What would you say are the most significant health and social problems of Nelson House residents today? Could you describe the reasons/factors contributing to these issues? [*Probe further with any items or links to stress and anxiety and/or environment*]
5. What would you say are the primary reasons/concerns presented by Nelson House members when visiting the doctor/nurse at the Nurses Station or Wellness Centre? Do you think this is an appropriate use of the resources?
6. Who are the primary groups in Nelson House that experience these health issues (problems)? Why do you think this is? Do you think this will change in the future?
7. What health care services are available in Nelson House?
8. Are available services operating at or below capacity? [i.e. could they take on additional clients?]
9. Can you identify any health care gaps? Why do these exist? [*Probe: are there health care services difficult to attain?*]
10. In general, what types of barriers exist to achieving overall good health in Nelson House?

Questions for Indicator Categories

Infant and Maternal Health:

Based on Infant and Maternal Health statistics that we looked at there was a difference between Nelson House and other similar communities in Manitoba. Nelson House, for the most part seems to have lower rates of birth and teen births than Manitoba First Nations, however they have higher infant mortality.

11. Does this result sound reasonable, based on your experience?
12. What factors do you think contributed to these results?
13. Do you think these trends will continue in the future?
14. What are the main causes of infant mortality in Nelson House?

Communicable Diseases:

As you are probably aware, NCN has had a few outbreaks related to communicable diseases over the past number of years [shigella in 1997-1998, MRSA in 2000]

15. What do you think lead to these outbreaks? (Probe here about water sources/potable water also about basic plumbing in homes).
16. Have there been other outbreaks we are not aware of? (e.g. outbreaks that don't show up in our data)
17. Do you foresee any changes in the prevalence and transfer of communicable diseases/health outbreaks in the future for Nelson House?
18. Do you see high rates of Sexually Transmitted Diseases? Are you concerned about STD's in Nelson House?

Mortality and Premature Mortality:

Although Nelson House is comparable to other First Nations Communities, there still is a much higher mortality rate than that of the rest of Manitoba. What is unique about Nelson House mortality rates is the reasons for death are somewhat different than other communities (Injury and poisoning, and disease of the circulatory system for males: disease of the circulatory system and cancer for females are the two main reasons for death in Nelson House and there is a higher rate of undefined/unknown reasons for death).

19. Mortality/deaths are difficult to discuss because of the small size of this community and how close people are to one another. Having said this, in your experience, what would you say are the reasons or circumstances that lead up to these situations? [*Provide table with general categories of reasons/circumstances for death*]

Diabetes, Injuries, Hypertension:

Diabetes, injuries, hypertension are among the highest incidence of disease in Northern Manitoba,

20. What are incidence rates of these diseases like in Nelson House?
21. Regarding **diabetes**, do people in Nelson House seem to understand how to take care of their diabetes and prevent further complications (like amputation, blindness etc.)? Are you seeing young people with diabetes or mostly older? Are patients compliant in how they are told to manage their diabetes and hypertension?
22. Regarding **injuries**, do you see high rates of what you perceive to be self inflicted injuries? Are there particular circumstances that tend to be common to injuries? (i.e. lack of seatbelt use/helmet use, alcohol, injuries related to cold weather etc.).

Child Health Questions:

23. Do they see high rates of ear infection in children? [*otitis media*].
24. Do you think fetal alcohol syndrome/effect is a problem in this community? Do you foresee change in fetal alcohol syndrome/effect rates in the future?
25. What about baby bottle mouth (*saw high rates of hospital utilization for dental work*)?

Health Care Utilization:

26. What are the primary reasons in Nelson House for people to visit a physician or health centre? Is it mostly appropriate or inappropriate use? Are there any specific groups of people within Nelson House that you see as high need or with poor health status? Alternatively, do you see (or not see) any specific groups of people within Nelson House that are in good health and have limited concerns?

Future Plans (Wuskwatim Generating Station):

Overall, considering what you know with regards to health conditions and the health of Nelson House and considering what you know about the future plans of Nelson House (including the Wuskwatim Generating Station project)

27. Do you think the health of community members and provision of local health care services will be impacted by the Wuskwatim Project? If so, how?
28. Any other comments or questions?

3.2 SOCIAL WELL-BEING

Ways of Life

1. Could you describe the main lifestyles of individuals and families in your community? For example, what are people's typical weekday and weekend activities?
Probe re:
 - Connection to the land – daily/seasonal patterns; who remains connected
 - Those who have wage employment
 - Those who don't have wage employment
 - Differences among age groups
2. How have local lifestyles changed in the last 10 to 15 years?
3. How do you see the community changing in the next 10 years? Will ways of life change? Please explain.

4. How would the proposed project change lifestyle for these groups of people, if at all?
Probe with pathways

Health and Wellness

5. Could you describe the main health issues and concerns in the community?
 - Physical health
 - Spiritual health
 - Emotional health
6. What has been the major factors contributing to these health issues in recent years? And in the past? [*Why are these health issues as they are?*]
7. What are your hopes for the future with regards to health and well-being?
8. How do you see the proposed project changing health and wellness, if at all? [*probe with pathways*]

Social Issues

9. What are the key social issues in the community? [*For families, neighbourhoods and the community*]
 - Individuals
 - Families
 - Community
10. Have these social issues always been like this? If not, what has influenced this change?
11. How do you see the proposed project changing social issues, if at all? [*probe with pathways*]

3.3 COMMUNITY COHESION

1. Would you say that people in this community are close to one another? Do they help each other out?
2. What types of community groups are present in the community? What is participation like in these groups? Do members vary or are they generally the same people?
3. Is it difficult to get community volunteers? Are these typically the same people?
4. How are community decisions made? Are decisions generally left to the community or do other outside factors have a large influence on the outcome of decisions?
5. Who do people in the community generally go to with their concerns?

6. How active are people in local government? For example, do they attend Council meetings, talk to their local government representatives, etc.?

Wuskwatim Generation Station – SEIA

Thompson KPI Program Interview Guide

1.0 POPULATION AND MIGRATION IN THOMPSON

1. How would you describe the population of Thompson?
2. Have you observed any changes in the type of people living in Thompson over the past 5, 10 or 15 years? Explain.
3. Are you aware of any periods of peak in or out migration? If yes, could you describe these events and what stimulated them? What was their effect on:
 - social interactions;
 - economy;
 - the provision of social services?
4. Have you observed any over all trends in regional migration? E.g. Themes in where people are migrating from or where they are migrating to.
5. Are you aware of any factors or issues that contribute to migration into Thompson? Are you aware of any factors or issues that contribute to migration out of Thompson?
6. How do you think that the presence of a major industrial project would affect population levels in Thompson? Did you observe any changes in population levels as a result of the construction of the Limestone project? If yes, what were those changes? How did they affect:
 - the availability of temporary/rental housing;
 - the availability of purchase housing;
 - the overall Thompson economy;
 - child care provision;
 - school attendance;
 - community relations;
 - the provision of social services?
7. What affect do you think a project similar to the proposed Wuskwatim project would have on population levels in Thompson? Explain.
8. Is there recent population data for Thompson that you could provide? Is there recent data for the Aboriginal population in Thompson you could provide? Is there data on population projections that you could provide?

1.1 THE NCN POPULATION IN THOMPSON

1. Verification of our Thompson resident NCN members list.
2. Compared to 15 years ago, would you say that more, less or the same number of NCN members live in Thompson?
3. How would you describe migration from Nelson House to Thompson over the past 5, 10 and 15 years?
4. Why are NCN members moving to Thompson? Why do they return to NCN?
5. Do you think current trends will continue in the next 10 years?
6. Do you believe that the proposed Wuskwatim project will have any effect on the number of NCN members living in Thompson?

2.0 THOMPSON'S ECONOMY

2.1 GENERAL

1. How would you describe Thompson's economy today?
2. Overall, would you say that the economy is in a state of growth or decline?
3. How do you see Thompson's economy developing over the next 10 years?
4. Are you aware of any major development projects proposed or planned in the community within the next ten years? If yes, could you describe those projects?
5. What do you feel are the major factors influencing economic activity in Thompson?
6. What would you say were the most important economic events that occurred in Thompson's history? Could you describe those events and their impact on Thompson's:
 - economy;
 - labour force;
 - community functioning?

2.2 THE BUSINESS SECTOR

1. Who are the main actors in the;
 - commercial sector?

- industrial sector?
 - construction sector?
2. Are you familiar with the types of projects these firms have participated in? If yes, could you describe them?
 3. Are you familiar with the size and capacity of these firms? If yes, describe.
 4. Have any of the commercial, industrial or construction firms in Thompson had previous experience with large-scale industrial projects? If yes, explain.
 5. Could you describe any trends you have observed over the past five years in the *[Also ask this question in terms of 10 and 15-year trends]*;
 - commercial sector?
 - industrial sector?
 - construction sector?
- *If not addressed in the response, probe for trends in changes in:
- the number of businesses;
 - types of businesses;
 - scale of activity;
 - diversity in businesses.
6. How do you see each of these sectors developing over the next 10 years?
 7. What proportion of the businesses in Thompson are Aboriginal owned, either wholly or partially? Is this more than in the past?
 8. Are you aware of any incentives, or aid packages, available to new businesses starting up in the community?
 9. Are you aware of any assistance provided to existing firms?
 10. What types of barriers exist to Thompson firms bidding on large-scale industrial contracts?
 11. Can you identify any gaps in the goods and services currently provided by businesses operating in the community? Explain.
 12. Do you recall any impacts on the business sector in Thompson experienced as a result of construction of Limestone?
 13. What effect do you think a project like the proposed Wuskwatim generating station would have on the business sector in Thompson?

14. Are there any other more-general effects on Thompson that you would anticipate as a result of the proposed Wuskwatim project?
15. Could you provide me with a listing of businesses operating in Thompson?
 - number of employees?
 - capital stock (infrastructure, machinery etc.)?
 - the type of work they do?
16. Could you provide me with a listing of Aboriginal owned businesses?

2.3 EMPLOYMENT, TRAINING AND INCOME

1. Who are the major employers in Thompson? Has this changed in the last 15 years?
2. Would you say there are more or less job opportunities available in Thompson now than in the past?
3. Do you feel that the types of employment opportunities are different now than in the past? If yes, how are they different?
4. Could you describe any trends you have observed over the past 15 years in terms of:
 - the labour force;
 - unemployment rates;
 - skill levels of the labour force;
 - composition of the workforce;
 - wages and income?
5. Is there a steady supply of labour in Thompson? Can you recall a period of labour surplus or shortage? If yes, could you describe the events surrounding the labour surplus/shortage? What were the impacts of this surplus/shortage?
6. Are there any features or characteristics of the Thompson labour force that set it apart from other communities?
7. Can you identify any skill gaps, or areas where training is needed, in the current labour force?
8. How would you describe Aboriginal involvement in the work/labour force in Thompson? What types of jobs are they primarily employed in?
9. Have you observed any changes in this involvement over the past 5, 10 or 15 years?
10. Are you aware of any specific training opportunities available to members of the Aboriginal community? If yes, could you describe those opportunities?

11. Do you recall any impacts on the labour force resulting from the construction of Limestone? (also ask regarding the Aboriginal labour force)
12. What effect do you think a project like the proposed Wuskwatim generating station would have on the labour force in Thompson? (also ask regarding the Aboriginal labour force)
13. Are there any other more-general effects on Thompson that you would anticipate as a result of the proposed Wuskwatim project?
14. Could you provide recent statistics on:
 - labour force activities;
 - employment activity;
 - training and skill levels;
 - income and wage levels?

2.4 INCO'S ROLE IN THE THOMPSON ECONOMY

1. Could you describe INCO's history in Thompson?
2. How would you describe INCO's involvement in the community of Thompson?
3. Could you highlight any major events that have occurred within the company in the last 5, 10 and 15 years?
4. Does INCO plan to expand or cutback its operations in Thompson in the next 10 years?
5. Do you have information on current, historic and/or projected employment levels at INCO?
6. Has the company ever had difficulty hiring workers?
7. Do you recall any impacts on INCO's operations resulting from the construction of Limestone?
8. Do you foresee any impacts on INCO's operations resulting from the proposed Wuskwatim generating station? Do you foresee any competition for the INCO workforce resulting from the project?
9. Do you have any ideas on what implications the proposed Wuskwatim project may have on the community of Thompson generally?

2.5 COMPATIBILITY WITH GOALS AND PLANS

1. Are there particular areas of concern, which the Development Plan was intended to address? Of these, which area is of greatest concern?
2. What changes do you envision for the community over the next 10 years?
3. What is the intended time frame for the current Community Development Plan?
4. What is the general capacity of the community to deal with increased demands (housing, infrastructure and service)?
5. The Community Development Plan specifically refers to the need to be compatible with large-scale industrial development projects (page 39), how has this been integrated into the Plan?
6. What features of the Plan address this need?
7. Did the construction of the Limestone Generating Station (1985-1992) have an effect on the community's goals and plans?
8. Would you anticipate that the proposed Wuskwatim project would have an effect on the community's plans and goals?
9. Might it be possible to get copies of the maps from the 2001 Community Development Plan?

3.0 COMMUNITY INFRASTRUCTURE AND SERVICES

3.1 HOUSING & ACCOMMODATION

1. What is the total number of houses/ apartments / condos in Thompson, and what proportion are available for sale / rent?
2. Have these numbers been fairly consistent over the past 10 years?
3. Do you expect this to change in the next 10 years? Why or why not?
4. What factors contribute to variability in housing availability?
5. Do you know of any new projects planned for the next 10 years (housing / condo / apt/ hotel)?

6. What is the average value of homes? What is the range over the past 10 years? Does this figure fluctuate widely? What is the ratio for the different values (i.e. 10% less than \$40 000, 30% between \$40 000 - \$70 000)
7. Is there any subsidised housing available? If so, what proportion of homes are subsidised?
8. What is the average cost to rent an apartment? What is the range?
9. How much seasonal fluctuation is there in housing occupancy? (People only there for the summer, for example? Therefore, more places to rent in the winter?) If so, what are the reasons for the fluctuations?
10. Did the construction of the Limestone Generating Station (1985-1992) have an effect upon the housing and accommodation conditions in Thompson?
11. Would you anticipate that the proposed Wuskwatim project would have an effect upon Thompson's housing and accommodation conditions?

3.2 WATER AND WASTE DISPOSAL

1. What is the population that could be served by the current water and sewer system?
2. When was the capacity of the water and sewer systems last increased? What prompted this change?
3. Do you anticipate a need to increase capacity in the next 10 years?
4. Are there any limitations on increasing water and sewer capacity?
5. What is the rated capacity (gals or m3) for water services?
6. What is the peak demand (gals or m3) for water services?
7. What is rated capacity (m3) of the current sewage system?
8. What is the peak demand (m3) of the current sewage system?
9. How is solid waste disposed? Where are the grounds located?
10. What is the remaining capacity of the waste disposal grounds in years?
11. Is there a recycling program in the community?
12. Did the construction of the Limestone Generating Station (1985-1992) have an effect upon the water and waste services in Thompson?

13. Would you anticipate that the proposed Wuskwatim project would have an effect upon Thompson's water and waste services?

3.3 ROADS

1. What concerns do you have with Thompson's existing internal road system?
2. Have there been any developments to the internal road structure over last 10 years?
3. Are there any planned developments?
4. What are the accident rates on the city's internal road system?
5. Where are the most accident-prone intersections?
6. What are the relative traffic levels on the major routes?
7. Did the construction of the Limestone Generating Station (1985-1992) have an effect upon the internal road system in Thompson?
8. Would you anticipate that the proposed Wuskwatim project would have an effect upon Thompson's internal road system?
9. Can you please provide an internal road structure map for the City of Thompson? Does this map include the different road classifications?
10. Are there any historical maps over the past 10-20 years showing changes in the internal road structure?

3.4 EDUCATIONAL FACILITIES AND SERVICES

1. What are the current enrolments at each school in Mystery Lake School Division? (Or what is the total enrolment for all the schools in the School Division?)
2. Is there capacity for the school system to accept more students? Are there certain grade levels that may be more problematic than others? (i.e. primary vs. secondary)
3. Do you anticipate that expansion will be needed in the next 10 years given current trends?
4. What programs are offered by the adult education centres?
5. Are students subsidised in these programs?

6. Are there any planned expansions to the adult educational facilities or services?
7. Have there been any expansions to the adult educational facilities or services over past 10 years?
8. Are there any particular issues, areas of concern or limitations to development of the educational facilities and services (i.e. financial, infrastructure, etc.)?
9. Did the construction of the Limestone Generating Station (1985-1992) have an effect upon Thompson's educational facilities and services?
10. Would you anticipate that the proposed Wuskwatim project would have an effect upon Thompson's educational facilities and services?

3.5 HEALTH SERVICES

1. What are the current numbers of doctors, nurses and other health services providers? Over the past 10 years? Projection for the next 10 years?
2. What is the current capacity versus the current demand for health services? What has been the trend over the past 10 years?
3. How many hospital beds are currently available? Over the past 10 years? Projection for the next 10 years?
4. What is the average occupancy rate for the hospital over the past 10 years? Does this figure fluctuate? What is the range? Seasonal variability?
5. Projection when capacity will equal demand?
6. Are there any planned expansions?
7. Been any expansions over past 10 years?
8. Particular issues, trends or areas of concern?
9. Any demands that are not currently being met?
10. Are there infrastructural restrictions on providing current health services?
11. Which health services have to be provided outside of Thompson? What is the current level? Over the past 10 years? Projection for the next 10 years?
12. How many emergency calls were there over the past year? Over the past 10 years?

13. What are the most common emergencies?
14. Did construction of the Limestone Generating Station (1985-1992) have an effect upon Thompson's health facilities and services?
15. Would you anticipate that the proposed Wuskwatim project would have an effect upon Thompson's health facilities and services?

3.6 POLICING AND ENFORCEMENT

1. What is the current number of police officers on staff? Over the past 10 years? Next 10 years?
2. What are the primary policing issues facing the City of Thompson?
3. Do you feel that you are adequately staffed and equipped to handle current demands?
4. Are there any planned expansions?
5. Have there been any expansions over past 10 years?
6. Particular issues, trends or areas of concern?
7. What is the average occupancy rate for the jail over the past 10 years? Does this figure fluctuate? What is the range? Seasonal variability? Any expansions over the past 10 years? Planning any expansions over the next 10 years? Why?
8. Can you please provide the crime statistics by code for the last 10 years?
9. Did the construction of the Limestone Generating Station (1985-1992) have an effect upon Thompson's policing services?
10. Would you anticipate that the proposed Wuskwatim project would have an effect upon Thompson's policing services?

3.7 COMMUNITY RECREATION

1. Do you have a list of all of the facilities and programs for recreation in the City of Thompson?
2. What are the most common recreational activities?
3. What is the approximate number of residents that participate in each of these activities?
4. Are there issues where the demand exceeds the supply of provided recreational activities? (i.e. too many hockey teams for the arena's capacity)

5. Are there any community recreation demands that are not currently being met? If so, why?
6. Is there capacity to allow for increased community recreational demands in the future?
7. Do you have any maps of the recreational use areas? (suggested by Larry Stefanuik)
8. Do you have a list of the local recreational organizations?
9. Did the construction of the Limestone Generating Station (1985-1992) have an effect upon Thompson's community recreation?
10. Would you anticipate that the proposed Wuskwatim project would have an effect upon Thompson's community recreation?

3.8 MUNICIPAL FINANCE

1. What is the general state of affairs, priorities and main issues for Municipal Finance over the past 10 years?
2. What potential issues, challenges and opportunities for Municipal Finance do you see if the Municipality has to deal with a significant increase in population? (In terms of increased housing, transportation, community recreation, etc. demands)
3. What areas are potentially problematic if there are additional demands on Municipal Revenues?
4. What is the anticipated trend for municipal finance over the next 10 years?
5. What has been the effect of INCO's reduced Grants-In-Lieu on: Municipal Finance? Politically?
6. What measures have been taken to offset the reduction in Grants-In-Lieu? (Increased property taxes? decreased municipal expenditures? etc.)
7. Were there any effects on Municipal Finance during the construction of the Limestone Generating Station (1985-1992)?
8. Would you foresee there being any effects on Municipal Finance by the construction of the proposed Wuskwatim Generating Station?
9. Could you please review and comment upon the revenues, expenditures and capital? (Have him look over the charts and figures that we have generated for the Municipal Finance section)

10. Can you please provide us with the Municipal Finance figures for 2000 and 2001? (In the format that is provided to the Department of Intergovernmental Affairs for their Statistical Information – Municipalities of the Province of Manitoba Report)

4.0 THOMPSON PERSONAL, FAMILY AND COMMUNITY LIFE

4.1 WATER AND TRAIL -BASED NAVIGATION SAFETY AND ACCESS

1. Which areas do Thompson residents use for outdoor recreation? What types of outdoor recreational activities occur?
- Hunting?
 - Fishing?
 - Trapping?
 - Snowmobiling?
 - Other?

During which seasons are these outdoor recreational activities pursued?

2. For the areas west of Thompson (between the Burntwood River and PR #391):
- How important is outdoor recreation in this area?
 - What outdoor recreational activities occur? Where? When (which season)?
 - Why are these areas not used more for outdoor recreation by Thompson residents?
3. What are the attractions and impediments, in terms of location, for outdoor recreation by Thompson residents?
4. Are there any capacity problems for any of the higher use recreational sites (ex. Paint Lake)?
5. What has been the trend in outdoor recreation in these areas over the past 10 - 20 years?
6. How do you anticipate that outdoor recreation will change over the next 10 - 20 years? Why do you think that these recreational demands will change?
7. Have the areas and activities for outdoor recreation changed over the past 10 - 20 years? If so, why?
8. Are there any areas where recreational conflicts occur? (i.e. people snowmobiling along traplines)
9. Are there any designated areas for certain specific recreational uses? (i.e. no snowmobiling)
10. Were there any effects on outdoor recreation for Thompson residents during the construction of the Limestone Generating Station (1985-1992)?

11. Would you foresee any additional demands or pressures on outdoor recreation for Thompson residents as a result of the proposed Wuskwatim project?
12. What would you foresee as the potential implications of road access being created to Wuskwatim Lake in terms of outdoor recreation by Thompson residents?
13. Are there any Navigation Safety and Access issues along the Burntwood River where Thompson residents recreate?

4.2 COMMUNITY HEALTH

1. Basic understanding of:
 - The area covered by the BRHA.
 - General scope of facilities and services.
2. At present, what are the primary issues facing the BRHA?
3. What are the primary health issues facing the region?
4. Do you feel that you are adequately staffed and equipped to handle current demands? Would you be able to take on any additional demands? Are there any area (facilities or services) that are currently at capacity or beyond?
5. Are there any planned expansions for facilities or programs?
6. Have there been any expansions over past 10 years of facilities or programs?
7. Particular issues, trends or areas of concern? [*PROBE:*
 - *Reduced INCO workforce; population decline*
 - *Possible trend of those with special needs moving to Thompson (we've heard it from NH and the School Board; does it actually show up as a trend for them – e.g. dialysis)]*
8. In thinking about the proposed Wuskwatim project, what effect, if any, would you anticipate on BRHA? [*PROBE:*
 - *Small population change*
 - *Weekend activity*
 - *Economic changes*
 - *Traffic*
 - *Any others]*

4.3 WAYS OF LIFE

1. Could you describe the main lifestyles of individuals and families in your community? For example, what are people's typical weekday and weekend activities? [PROBE re:
 - *Connection to the land – daily/seasonal patterns; who remains connected*
 - *Those who have wage employment*
 - *Those who don't have wage employment*
 - *Differences among age groups*]
2. How have local lifestyles changed in the last 10 to 15 years?
3. How do you see the community changing in the next 10 years? Will ways of life change? Please explain.

4.4 COMMUNITY COHESION & ORGANIZATION

1. In general, would you say that people in this community are close to one another? Do they help each other out?
2. What types of community groups are present in the community? What is participation like in these groups? Do members vary or are they generally the same people?
3. Is it difficult to get community volunteers? Are these typically the same people?
4. How are community decisions made? Are decisions generally left to the community or do other outside factors have a large influence on the outcome of decisions?
5. Who do people in the community generally go to with their concerns?
6. How active are people in local government? For example, do they attend Council meetings, talk to their local government representatives, etc.?

5.0 GENERAL QUESTIONS ASKED OF ALL PARTICIPANTS

1. How long have you lived in Thompson?
2. How long have you been in this job?
3. Do you have any comments or information you would like to add?
4. Can I cite your name directly when referring to information obtained through this interview? If no, can we cite the name of your organization?

5. Can we contact you at a later date if we have further questions?

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APPENDIX THREE

**NCN Opinion Survey
Analysis of Household Survey Results and
Comparison to Total Responses**

**Prepared for:
NCN Future Development Team**

**Prepared by:
Dimark Communications Inc., in association with
InterGroup Consultants Ltd.**

August, 2000

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Background

In May, June and July of 2000, a comprehensive survey of Nisichawayasihk Cree Nation (NCN) members living in Nelson House was conducted to determine their opinions about their community and the future hydro development options being proposed. The survey was intended to cover all the adult residents of the community aged 16 and over. In order to allow an early look at the results a two-staged data collection process was used.

In the first stage, one person was selected at random from each household in the survey area and a survey was done with that person. This sample constituted the household survey and it is the results of this sample that are consistently reported throughout this analysis. After the household survey was completed, interviewers started over from the beginning, returning to households to complete as many surveys as possible with the remaining eligible respondents in each household. This was done to give everyone in the community an opportunity to provide their input and to verify that the sample did indeed provide a good indication of public opinions in the community. For the sake of comparison, total responses are reported here where relevant.

The completed household survey produced 377 interviews, or 31 per cent of the approximately 1,200 NCN members aged 16 years or over living in Nelson House. A random sample of this size is generally considered to be accurate within about 5 percentage points, 19 times out of 20. An additional 436 surveys were completed in the community, providing a total response of 813 surveys, or 68 per cent of eligible NCN members living in the community.

The following sections provide a detailed overview of the survey methodology, survey validity and survey results. There is also a consideration of how the results could be used for Future Development purposes, as well as other community work.

Survey Methodology

Survey instrument

The survey instrument was quite detailed. It included 91 questions, of which about half were open-ended and half were multiple choice. Some of the questions had multiple parts. For example, Question 1 asked respondents: "Do you feel good about the future of Nelson House?", with the opportunity to answer yes, no or don't know, and then went on to ask the open-ended question of "Why?".

The survey questions were designed to elicit NCN members' views about the following topics:

- The Future of Nelson House
- Possible Future Hydro Developments
- Business Opportunities
- Unions
- Manitoba Hydro Training and Employment
- Navigation and Safety
- In-Migration
- Past Agreements
- Country Food Use, and
- Social/Education/Recreation Issues.

The full survey can be seen in an [Appendix 1](#) at the end of this report.

Survey approach

NCN members living in Nelson House were hired to conduct the surveys. Of these, 7 were Community Consultants and 20 were temporary Community Consultants hired for this purpose. Staff from InterGroup Consultants Ltd. in Winnipeg provided on-site organizational and advisory support.

The survey was intended to cover all the adult residents of the community aged 16 and over. All of the surveys were carried out in person, with a Community Consultant asking the questions to respondents and recording their answers. Elders and Cree-speaking NCN members were surveyed by a special group of 5 people who were fluent in both English and Cree.

Throughout the survey process, information and notification about the survey was played at regular intervals on the Nelson House local radio in both Cree and English.

A two-staged data collection process was used in order to allow an early look at the results. This included a first pass, household survey followed by a second pass of remaining eligible residents. The latter constituted the total responses.

Household survey:

In the first stage, the household survey, one person was selected at random from each household in Nelson House and a survey was done with that person. The person interviewed was selected based on who had the most recent birthday in that household. In total, 377 households, of the approximately 400 households in Nelson House, are represented in the household survey.

Total responses:

After the household survey was completed, interviewers started over from the beginning, returning to households to complete as many surveys as possible with the remaining eligible respondents (those aged 16 or older) in each household. This was done to give everyone in the community an opportunity to provide their input and to determine whether the household survey provided a good indication of public opinions in the community. In total, an additional 436 surveys were completed in the community, providing a total response of 813 surveys, or 68 per cent of eligible NCN members living in Nelson House.

All of the completed surveys were coded to facilitate analysis of the results. Community Consultants in Nelson House and InterGroup Consultants Ltd. worked together to develop detailed coding lists for the open-ended questions in the survey. A coding team of 3 Community Consultants was then established to code all of the open-ended questions in the completed surveys. Multiple choice questions were coded by Dimark Communications Inc.. Dimark also inputted all of the results and developed frequency analyses for the responses to each question by the age, sex, education and income of those interviewed.

Survey confidentiality

Confidentiality was very important to NCN. In order to keep track of those who were interviewed, survey respondents were asked their names and treaty numbers. This information, however, was strictly gathered as a tracking measure. No names or treaty numbers were ever used in the data analysis portion of the survey process. All of the surveys were identified by randomly assigned numbers once coding was completed.

After coding and data entry were finished, the surveys were placed in sealed boxes. They will be kept at the office of NCN's lawyer for one full year. This office is not in Nelson House. Following this year, all of the surveys will be destroyed.

Survey Validity

Survey validity is based on the number of people interviewed and how representative these people are of the total population aged 16 and older in terms of age and sex, education levels, labour force and income.

In terms of strict numbers, the household survey managed to cover about 31 per cent of the approximately 1,200 NCN members aged 16 years and older living in Nelson House. An organized random sample of this size is generally considered to be accurate within

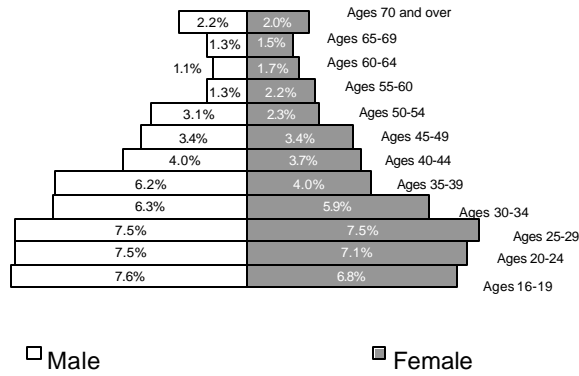
about 5 percentage points, 19 times out of 20. In addition to the 377 household surveys, a further 436 surveys were undertaken in an unorganized random fashion. This brought the total responses to 813 people, or 68 per cent of eligible NCN members living in Nelson House. As seen in the survey results section, the extra 436 surveys did not equate to any significant changes in the overall results. In general, the difference between the results from the household survey and total responses is about 1 to 2 percentage points. This indicates that the household survey provides a fairly accurate representation of community concerns and opinions.

The population characteristics of those surveyed in the household survey and the total responses have been compared to the population characteristics of all community members to determine if the sample group is representative of the total population. The population characteristics considered were age and sex distribution, education levels, labour force and income.

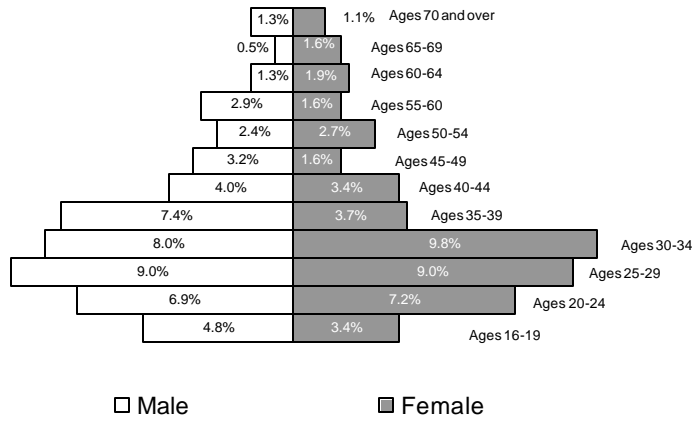
Age and sex distribution:

In terms of population distribution by age and sex, the figures below indicate that overall the distribution by age and sex of those interviewed for the household survey and the total responses is similar to that seen in the entire community. The exceptions are under-represented youth and elderly populations and an over-represented population in the ages 25 to 29 and 30-34 categories. The reasons for this are likely varied. The youth population may be under-represented because of a difficulty finding young people at home, a general lack of interest on the part of young people or a surveyor bias against interviewing young people. Elderly populations may be under-represented because many were not able to complete the survey for health reasons. On the other hand, it may be that the Manitoba Health data used to determine the overall community distribution is slightly inaccurate.

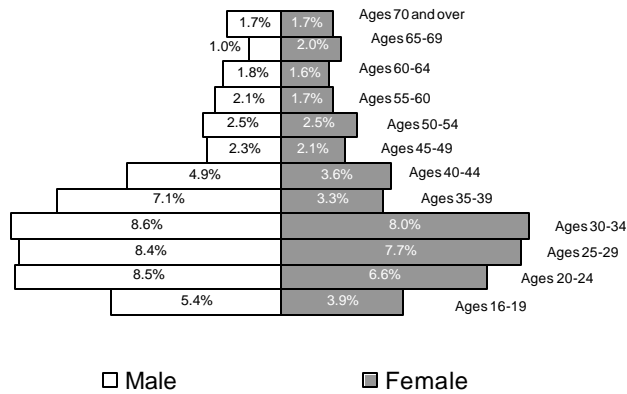
Population distribution of Nelson House - 1999 Manitoba Health data



Population distribution of household survey



Population distribution of total responses



Education:

In terms of education levels, the table below indicates that the household survey and the total responses tend to under-represent the number of individuals with less than a grade 9 level of education. This may be because the 1996 Statistics Canada data is inaccurate. It may also be because of the relatively high number of people reporting certificates as their highest level of education. Certificates are frequently given to Nelson House residents as a sign of recognition for hard work or the completion of seminars. The similarity between the education levels reported in both the household survey and total responses is another indication that the household survey provides a fairly accurate picture of the community as a whole.

Level of Education	Percentage of Total 1996 Statistics Canada data for Nelson House for ages 15 and over	Percentage of Total Household Survey	Percentage of Total Total Responses
	(Total = 1,070)	(Total = 377)	(Total = 813)
Less than Grade 9	33.6%	19.1%	22.9%
Grades 9 to 12:	43.0%	38.5%	40.3%
• Without Secondary School Graduation Certificate	85.9%	75.2%	75.3%
• With Secondary School Graduation Certificate	14.1%	24.8%	24.7%
Trades Certificate or Diploma	0.9%	4.5%	3.9%
Other Non-University Education Only	11.2%	18.8%	15.1%
• Without Certificate Or Diploma	41.7%	18.3%	26.8%
• With Certificate Or Diploma	58.3%	81.7%	73.2%
University:	11.7%	11.1%	10.9%
• Without Degree	72.0%	71.4%	71.9%
• With Bachelor's Degree or Higher	24.0%	28.6%	28.1%

Labour Force

Data for labour force calculated for the 1996 Census of Canada can be compared to those generated from the survey results. The comparison, seen below, indicates that survey respondents appear to have a much higher participation rate (persons in the labour force) than the 1996 Statistics Canada data indicates. This is likely because of differences in how this data was collected by Statistics Canada, as compared to the survey. The labour data do indicate, however, that the unemployment rates for male and

female survey respondents were fairly similar to those collected by Statistics Canada in 1996. The female unemployment rates are a bit higher than expected, but this is probably because of difficulties determining the participation of survey participants. The similarity between the household survey and total responses is very high and this suggests that the household sample provides a good representation of the total population.

Characteristics	1996 Statistics Canada data for ages 15 and over			Household Survey			Total Responses		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
Labour force characteristics of the population age 16 and over	1070	565	505	377	196	178	813	443	366
Persons in the labour force	465	275	195	365	192	173	791	434	357
· Employed	250	125	130	165	89	76	346	203	143
· Unemployed	210	150	60	200	103	97	445	231	214
· Not Stated	0	0	0	9	4	5	18	9	9
Persons not in the labour force	605	290	310	12	4	5	22	9	9
Participation rate	43.5%	48.7%	38.6%	96.8%	98.0%	97.2%	97.3%	98.0%	97.5%
Unemployment	45.2%	54.5%	30.8%	54.8%	53.6%	56.1%	56.3%	53.2%	59.9%

Household Income:

It is difficult to compare household income data collected for the 1996 Census of Canada with that collected in the survey process because of difference in definitions and understanding about the meaning of household income. The table below, indicates, however, that the household survey and total responses were quite similar.

Household Income (\$\$)	1996 Statistics Canada data Percentage of Total Households	Household Survey Percentage of Total Households	Total Survey Percentage of Total Households
Under \$10,000	13%	32%	32%
\$10,000 - \$19,999	33%	26%	28%
\$20,000 - \$29,999	26%	14%	14%
\$30,000 - \$39,999	11%	8%	8%
\$40,000 or more	16%	14%	11%

Not stated	0%	6%	7%
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Survey Results

This section of the report highlights the main, top level findings of the survey. For those who wish to examine the results for any question in more detail, a copy of the complete questionnaire is attached as [Appendix 1](#) and the results for each question are included in separate bound appendix documents to this report.

The primary focus of this section is the results generated from the household survey. The household survey results are used because they were gathered through the use of random sampling and are statistically valid. For the sake of comparison, the results of the total 813 responses are also included where relevant. In comparing the household survey and total responses most results show that there is less than a 1 percentage point difference between them.

The analysis of survey results concentrates mainly on cross-tabulations of the results for each question by age and sex of respondent. Additional cross-tabulations of the results by additional demographic characteristics (e.g., education, employment status) have also been prepared for the survey. It should be noted that each result is based on the number of people who answered the particular question, rather than the 377 persons interviewed for the household survey or the 813 total responses.

For convenience, the results are presented in the order they appeared in the questionnaire, summarized under the same headings. These headings are:

- The Future of Nelson House
- Possible Future Hydro Developments
- Business Opportunities
- Unions
- Manitoba Hydro Training and Employment
- Navigation and Safety
- In-Migration
- Past Agreements
- Country Food Use, and
- Social/Education/Recreation Issues.

The Future of Nelson House

This section included a number of open-ended questions intended to draw out what people felt about Nelson House, both good and bad. Some of the more notable results from the household survey are highlighted below. In almost all cases these results are within 1 or 2 percentage points of those seen in the total responses.

- 72% of people said they feel good about the future of Nelson House.
- While there were small differences across age groups, there was no trend due to age.
- When asked why they felt good about the future, most gave economic reasons such as “job opportunities” (35%) and “economic development” (24%).
- When they were asked what are the best things about Nelson House, the most frequently mentioned things were social in nature - “Lots of family and friends” (42% of respondents), “It’s home” (16%), “People are friendly” (11%), “close knit community” (7%).
- There were also some economic reasons mentioned – for example, “employment opportunities” (16%) and “new economic development opportunities” (6%).
- On the negative side, bad things mentioned about living in Nelson House included “substance abuse” (64%), “unemployment” (18%), and roads and landscaping (16% and 13% each). For the total responses, 59% identified “substance abuse” as a bad thing.
- When asked what shouldn’t change in the future, people gave a wide variety of answers but the most frequent one was “our culture or way of life” (16%).
- There were a few comments about “no more flooding” (3%) and “water levels in Footprint Lake”(4%), but the frequencies were quite low.
- When they were asked to name the one change that would benefit Nelson House the most in the next 5 years, people produced quite a wide variety of items, but the most frequent ones were those related to economic development issues, such as “higher employment” (23%); infrastructure issues, such as “paved roads and sidewalks” (13%); “more housing” (6%); and “better education” (8%).

There were 4 agree-disagree statements about social life in the community included in this section. The questions and the results that they produced are as follows:

To what extent do you agree or disagree with the following statements?

	Strongly Agree		Agree		Neither		Disagree		Strongly Disagree		Don't Know	
	Household Sample	Total responses	Household Sample	Total responses	Household Sample	Total responses	Household Sample	Total responses	Household Sample	Total responses	Household Sample	Total responses

People here feel close to each other	21.8%	20.5%	43.5%	45.6%	9.5%	11.1%	18.8%	16.6%	3.2%	3.2%	3.2%	3.0%
People don't help one another in times of crisis	9.8%	10.2%	17.2%	18.2%	10.1%	9.8%	48.8%	45.6%	13.5%	15.3%	0.5%	0.9%
People help one another on a daily basis	9.5%	9.8%	45.4%	46.0%	19.1%	18.0%	20.7%	20.0%	2.7%	3.1%	2.7%	3.1%
Easy to get volunteers	5.6%	7.0%	35.3%	35.3%	20.2%	20.4%	30.2%	28.8%	8.0%	7.3%	0.8%	1.2%

Older respondents (+ 50 years) were more likely to agree that people don't help one another in times of crisis, and younger respondents (under 40 years) were more likely to disagree with this statement. This was consistent in both the household survey and the total responses.

Possible Future Hydro Development

This section of the survey asked a number of questions about future hydro development. Since it was one of the longest sections, it has been broken out into 4 subsections for presentation. The results of the household survey are primarily presented below, however, the results of the total responses are included where relevant.

Awareness

- When asked what they had heard about the proposed developments at Taskinigup Falls or Notigi, most respondents in the household survey said either “nothing” (43%) or “a little” (46%). Very few people felt that they had heard a lot about these developments. Of those that heard something about these developments, 19.5% had heard nothing about Notigi and 0.5% had heard nothing about Taskinigup Falls. The results were almost identical for the total responses.
- Awareness was lowest among the youngest and oldest respondents and lower among women than men for both the household survey and total responses.
- When those who had heard either a little or a lot were asked what they had heard about the proposed developments, most could recall at least something specific about these developments.
- When they were asked what they had heard about the proposed generating station at Taskinigup, they were most likely to recall “needing new access road” (42% in the household survey), “would have a construction camp for

workers” (45% in the household survey), and that “it would take 4-5 years to build” (32% in the household survey).

- When they were asked what they had heard about the proposed generating station at Notigi, they were most likely to recall “it would be built near Notigi control structure” (37% in the household survey), “water levels in Notigi, Three Point and Footprint Lakes would stay the same” (28% in the household survey), and that “access would be from PR391” (28% in the household survey).
- Household survey respondents said they had heard about these developments from a number of different sources, including “friends and neighbours” (54%), the “Future Development Newsletter” (51%), community consultants” (38%), “a radio program” (25%), “Chief and Council” (24%), and the “Public Open House” (21%). Results from the total responses varied between 1 and 3 percentage points, but did not alter the overall ranking of results.

Priorities for Future Hydro Developments

In this section, people were read a long series of possible priorities for future development and asked to indicate how important each one was to them. The statements and the results they produced are shown below for both the household survey and total response results.

Please tell me how important the following things are to you?

	Very Important		Somewhat Important		Not Very Important		Not At All Important		Don't Know	
	Household Sample	Total responses	Household Sample	Total responses	Household Sample	Total responses	Household Sample	Total responses	Household Sample	Total responses
NCN owning part of the project	77.7%	78.4 %	14.9 %	14.6 %	1.1%	1.5%	1.6%	1.1%	4.8%	4.4%
Improving access for NCN to resource areas	75.3%	73.1 %	17.5 %	20.5 %	1.6%	1.2%	1.6%	1.2%	4.0%	3.9%
Restricting access for others to resource areas	53.8%	51.3 %	19.4 %	20.4 %	13.8 %	13.2 %	7.7%	8.9%	5.3%	6.3%
Involving the community in Hydro-related decisions	88.1%	87.5 %	8.5%	8.9%	1.1%	0.9%	0.3%	0.6%	2.1%	2.2%
Creating employment opportunities	93.9%	94.2 %	4.5%	4.4%	0.3%	0.2%	0.3%	0.1%	1.1%	1.0%
Business opportunities for local residents	89.9%	89.4 %	7.4%	8.5%	1.6%	0.9%	0.3%	0.1%	0.8%	1.1%
Training for local residents	96.0%	95.4 %	2.7%	3.4%	0.3%	0.1%	0.5%	0.2%	0.5%	0.7%

	Very Important		Somewhat Important		Not Very Important		Not At All Important		Don't Know	
	Household Sample	Total responses	Household Sample	Total responses	Household Sample	Total responses	Household Sample	Total responses	Household Sample	Total responses
Minimizing flooding	83.8%	82.3 %	10.1 %	11.1 %	1.9%	2.3%	1.3%	1.8%	2.9%	2.5%
Compensation	86.7%	86.3 %	9.8%	10.7 %	0.3%	0.7%	1.1%	0.5%	2.1%	1.7%
Protecting important sites	91.5%	91.3 %	6.1%	6.0%	0.3%	0.5%	0.5%	0.6%	1.6%	1.6%
Protecting our way of life	93.6%	93.5 %	5.0%	5.2%	0.3%	0.5%	0.3%	0.1%	0.8%	0.7%
Protecting our culture	90.5%	90.4 %	7.7%	8.0%	0.3%	0.2%	0.3%	0.2%	1.3%	1.1%
Community development	89.9%	90.2 %	8.2%	8.5%	0%	0%	0.5%	0.2%	1.3%	1.1%
Protecting water quality	94.7%	94.1 %	2.7%	3.7%	0.8%	0.4%	0.3%	0.2%	1.6%	1.6%
Navigation and safety	87.8%	87.3 %	9.5%	9.6%	0.5%	0.6%	0.3%	0.1%	1.9%	2.3%
Protecting human health and safety	97.3%	96.2 %	1.3%	2.3%	0.3%	0.1%	0.3%	0.2%	0.8%	1.1%
Protecting fish	89.1%	88.7 %	8.0%	8.6%	0.3%	0.6%	0.8%	0.5%	1.9%	1.6%
Protecting plants, like herbs & berries	92.0%	90.3 %	6.6%	7.6%	0%	0.7%	0.3%	0.1%	1.1%	1.2%
Protecting big-game animals	92.3%	91.0 %	6.1%	7.1%	0.3%	0.5%	0%	0%	1.3%	1.4%
Protecting fur-bearing animals	88.3%	87.9 %	8.2%	8.9%	0.5%	1.1%	1.1%	0.6%	1.9%	1.5%
Maintaining the beauty of the area	94.2%	92.4 %	3.7%	5.7%	0.5%	0.6%	0.8%	0.5%	0.8%	0.9%
Shoreline clearing & management of debris	91.5%	90.2 %	7.7%	7.6%	0%	0.4%	0%	0%	0.8%	1.8%
Monitoring of effects	82.0%	83.0 %	12.2 %	12.2 %	0.3%	0.5%	0.3%	0.2%	5.3%	4.1%
Controlling access by non-residents to the community	61.8%	61.5 %	18.8 %	16.9 %	7.7%	10.1 %	7.4%	7.6%	4.2%	3.9%

Probably the most interesting thing about these results is the high level of importance placed on almost every item. Only four of the 24 items had less than 80% of respondents saying they were “Very Important”. In the household survey, the four items with the lowest importance ratings were “Restricting access for others to resource areas” (54%), “improving access for NCN to resource areas” (75%), “controlling access by non-residents to the community” (62%), and “NCN owning part of the project” (78%).

Comparing to total responses, the results did not vary more than 1 to 2 percentage points. “Restricting access for others to resource area” and “controlling access by non-residents to the community” were considered a threat primarily by older people in the community and less so with younger respondents.

Benefits and Concerns

This section asked people to name the concerns that they might have about the proposed developments and the benefits which they thought the projects might produce. As these were open-ended questions, there was a wide range of answers given. The full set of answers is shown in the detailed tables for those who wish to examine them more closely. Similar factors were raised with respect to both projects, as is shown below:

Concerns about Taskinigup

- Flooding (31% in the household survey; 30% with total responses)
- Negative environmental impacts (34% in the household survey; 29% with total responses)
- Seeing jobs go to NCN members (15% in the household survey; 12% with total responses)

Benefits of Taskinigup

- Job creation (75% in the household survey; 76% with total responses)
- NCN would profit economically (16% in the household survey; 15% with total responses)
- Training opportunities (15% in the household survey; 15% with total responses)

Concerns about Notigi

- Flooding (30% in the household survey; 28% with total responses)
- Negative environmental impacts (33% in the household survey; 28% with total responses)
- Seeing jobs go to NCN members (9% in the household survey; 7% with total responses)

Benefits of Notigi

- Job creation (70% in the household survey; 71% with total responses)
- Training opportunities (15% in the household survey; 13% with total responses)
- NCN would profit economically (11% in the household survey; 11% with total responses)

Interest in Future Hydro Development

The following are results from the household survey to the question of whether respondents would support or not support future hydro developments, based on what they currently know. Differences in the total responses are noted, as well as instances where unique characteristics of respondents were apparent.

- When asked if they would support future hydro development, the majority said they would support it either definitely (23%) or probably (36%). (Note that all 377 respondents in the household survey answered this question.)
- Of the total responses, 21% said they would support it definitely and 34% said they would probably support it.
- Very few people (5%) said they definitely would not support future development. Another 5% said they would probably not support future development and 32% were not sure. (Note that all 377 respondents in the household survey answered this question.)
- Older respondents were more likely to state that they definitely would not support future development and younger respondents more likely to be unsure.
- Respondents with Grade 10 or less education were more likely to be unsure about whether they could support any future development than people with higher levels of education.
- Respondents employed full time were more likely to definitely support any future development (30%) than those employed part-time (17%) or those that were unemployed (20%).
- Households with total incomes of greater than \$30,000 were more likely to definitely support future development (35%) than households with less than \$10,000 of total income (20%).
- Of those who said they would support future development, most said it was because of the increased job opportunities (53%) and the benefits to the community (19%).
- On partnering with other First Nations on hydro developments in the NCN area, 40% said they would be opposed to such partnering, 40% said they would be in favour of this type of partnership and 19% said they did not know.
- On partnering with other First Nations on hydro developments outside the NCN area, 36% said they would be opposed to such partnering, 43% said they would be in favour of this type of partnership and 21% did not know.
- In terms of partnering with other First Nations on other economic ventures within the NCN area, 27% said they would be opposed to this type of partnering, 57% said they would be in favour of such partnerships and 16% said they did not know.
- When asked if they trusted Manitoba Hydro, 25% said they trust Manitoba Hydro somewhat or completely and 49% said they distrust Manitoba Hydro either somewhat or completely. Of the total responses, 25% said they trust Manitoba Hydro somewhat or completely and 46% distrust Manitoba Hydro. There was little variation between responses when considering the level of education, or employment status, family status or household income level.
- The reasons given most frequently in the household survey for distrusting Manitoba Hydro were all based on past performance - "past history" (44%),

“broken promises” (44%), and “lack of commitment to past agreements” (19%). Total responses identified the same reasons for distrusting Manitoba Hydro – “past history” (39%), “broken promises” (42%) and “lack of commitment to past agreements” (9%).

- When they were asked what it would take to regain their trust, the answers reflected the concern with past performance. The two most frequent answers were “honesty from government and Hydro” (15%) and “keep promises to NCN and other First Nations peoples” (17%). Among household survey respondents, 13% stated that nothing would regain their trust, while 11% of total responses stated the same.

Business Opportunities

Respondents were asked whether they would be interested in pursuing business opportunities related to future hydro developments and, if so, what types of opportunities. The following are the results from the household survey. The results from the total responses were similar.

- More than two-thirds of respondents (66%) said they would be interested in pursuing contracts and business opportunities related to the new hydro developments.
- When asked what opportunities they would be interested in, people mentioned a variety of possibilities. The most frequent were catering (19%), security (20%), and equipment rental (6%), but it is worth noting that these were also the three types of businesses that were included in the question as examples.
- People did not see many barriers to developing business ideas – almost half did not name any barriers when asked this question. The two that were mentioned most were “access to financial resources” (19%) and “lack of business training” (9%).
- Of the people who indicated they were interested in pursuing business opportunities, 82% said they had not previously owned or operated a business and 70% said they had no training in operating a business.
- Almost all of them, however, expressed an interest in getting business training (89%).

Unions

This section contained a number of questions specific to union membership. Since very few people had been members of a labour union (15% of the household survey and 13% of the total responses), very few people answered these questions. As a result, they will

not be discussed in this report. Those who are interested in the results will find them in the detailed tables.

Manitoba Hydro Training and Employment

Since very few people had any experience with the Limestone project (6% of the household survey and 7% of the total responses), this series of questions will not be dealt with here. Again, the results for all these questions are included in the detailed tables.

Navigation and Safety

This section contained a number of questions about navigation and safety in the NCN Resource Management Area, as well as the effectiveness of current measures to improve safety on these water bodies. The following are results of the household survey and total responses, where relevant.

- Just over half the people surveyed (54% of the household survey and 52% of the total responses) had traveled on lakes and rivers in the NCN Resource Management Area in the past year.
- Places most often mentioned were Footprint Lake (48%), Rat River (34%), Burntwood River (28%), and Threepoint Lake (28%).
- Approximately half (53%) of the people who traveled on the lakes and rivers said they had encountered navigational difficulties. The main difficulties were “debris” (46%), “slush” (14%) and “stumps” (14%)
- These people also gave details about where and during what season difficulties were encountered. These are included in the detailed tables found in the attached appendix documents.
- People who had traveled on the waterways were asked to rate the effectiveness of various measures to improve navigation and safety. The measures rated are shown below for the total household survey and total responses.

How effective do you think the following current measures are?

	Effective		Somewhat Effective		Not Effective		Don't Know	
	Household Sample	Total responses	Household Sample	Total responses	Household Sample	Total responses	Household Sample	Total responses
Preparing, maintaining ice crossings & trails	66.2%	59.6%	21.6%	26.1 %	7.4%	8.8%	4.9%	5.5%

	Effective		Somewhat Effective		Not Effective		Don't Know	
	Household Sample	Total responses	Household Sample	Total responses	Household Sample	Total responses	Household Sample	Total responses
Monitoring ice safety	59.8%	58.2%	26.0%	24.7 %	7.8%	10.0%	6.4%	7.1%
Providing notices on ice conditions and load limits	62.7%	62.7%	18.6%	20.0 %	8.3%	7.8%	10.3%	9.5%
Holding annual public meetings	51.0%	50.6%	18.6%	20.4 %	20.6%	19.5%	9.8%	9.5%
Removing debris from shorelines	66.2%	63.4%	20.6%	22.3 %	8.8%	10.0%	4.4%	4.3%
Providing mid-channel markers and buoys	68.6%	67.0%	18.6%	20.2 %	6.9%	6.9%	5.9%	5.9%
Signs warning of rapids or falls between Footprint & Wuskwatim	64.7%	63.4%	13.7%	13.8 %	7.8%	9.3%	13.7%	13.3%
Maintaining existing portages at Gods and Early Morning Rapids	50.0%	51.1%	11.3%	12.4 %	6.9%	7.1%	31.9%	29.5%
Providing snow fencing and reflectors to restrict access to Footprint Lake	52.0%	50.1%	16.2%	16.6 %	13.2%	14.7%	18.6%	18.5%
Providing flashing amber lights at Gods and Early Morning Rapids	52.0%	48.9%	9.3%	13.8 %	10.8%	10.2%	27.9%	27.1%

Clearly, a majority of people thought that each of these measures are effective. The lowest rated item was maintenance of existing portages at Gods and Early Morning Rapids, and even there 63.3% thought it was at least somewhat effective.

In-Migration

Survey respondents were asked whether they had family or friends living outside of Nelson House that may return to the community because of future hydro developments or for other reasons. The following are the results of the household survey, with the total responses highlighted where relevant.

- A significant number of people (74% of the household survey and 75% of the total responses) said that they had immediate family members living off reserve.
- The locations mentioned most often were Thompson (55%), Winnipeg (50%), and South Indian Lake (22%).
- About one-half (47%) of those with family members living off-reserve said that they expected some family members to return if hydro development

proceeded. When asked how many family members might return, the bulk of the answers were from 1 to 3 people.

- About one-third (36%) of the respondents also said they expected people from other First Nations or communities would attempt to settle in Nelson House if the hydro development were to go ahead.
- Only 9% of the household survey said they knew of people who would be returning to Nelson House for reasons other than hydro development.
- The most common concern that people had about new families moving to Nelson House was a housing shortage (39% of the household survey and 36% of the total responses).

Past Agreements

NFA Implementation Agreement

- People did not feel that they were very familiar with the existing NFA Implementation Agreement. Overall, only 7% of the household survey and 6% of the total responses said they were “very familiar” with it, while 41% of the household survey and 39% of the total responses said they were “somewhat familiar” and 52% of the household survey and 54% of the total responses said they were “not at all familiar” with this agreement.
- Those in the middle age groups, from 35-49, were most likely to say they were “very familiar”, but even then less than 1 person in 5 felt that way. Respondents with full-time employment were more likely to be “very familiar” than part-time or unemployed respondents. As well, respondents with higher household incomes were more likely to be “very familiar” (21% of the household survey) than lower income households (4% of the household survey).

Next, there was a series of questions addressing people’s satisfaction with different aspects of the NFA Implementation Agreement. The results were as follows:

How satisfied are you with each of the following items relating to the '96 NFA Implementation Agreement?

	Very Satisfied		Somewhat Satisfied		Neither		Somewhat Dissatisfied		Very Dissatisfied		Don't Know	
	Household Sample	Total responses	Household Sample	Total responses	Household Sample	Total responses	Household Sample	Total responses	Household Sample	Total responses	Household Sample	Total responses
Overall satisfaction with Agreement	6.6%	7.7%	28.9%	28.7%	16.7%	15.1%	9.0%	8.0%	6.9%	6.9%	31.8%	33.5%

	Very Satisfied		Somewhat Satisfied		Neither		Somewhat Dissatisfied		Very Dissatisfied		Don't Know	
	Household Sample	Total responses	Household Sample	Total responses	Household Sample	Total responses	Household Sample	Total responses	Household Sample	Total responses	Household Sample	Total responses
Correct setting of water regime levels and flows	10.3 %	11.1 %	33.2 %	32.3 %	12.5 %	13.0 %	11.9 %	12.4 %	14.9 %	13.9 %	17.2 %	17.1 %
Trust office operation	27.9 %	26.3 %	30.8 %	33.8 %	9.8%	8.9%	8.2%	7.3)	4.5%	4.4%	18.8 %	19.3 %
Community Approval Process	22.5 %	21.8 %	30.5 %	29.5 %	9.0%	10.6 %	8.0%	7.9%	5.6%	4.8%	24.4 %	25.3 %
Resource Management Board	20.7 %	18.8 %	27.1 %	27.3 %	12.5 %	11.8 %	4.2%	3.9%	4.0%	3.8%	31.6 %	34.2 %
Environment	16.7 %	18.7 %	29.2 %	32.0 %	8.8%	8.9%	13.5 %	12.7 %	21.8 %	17.5 %	10.1 %	10.3 %
Future development planning process	31.6 %	31.6 %	37.4 %	36.9 %	11.4 %	11.3 %	5.0%	3.9%	1.3%	1.5%	13.3 %	14.8 %
Country Food Program	54.6 %	53.8 %	30.5 %	27.7 %	4.0%	6.5%	1.9%	2.6%	1.6%	1.4%	7.4%	8.1%
Commercial Fishing Program	33.7 %	34.1 %	30.0 %	29.5 %	10.1 %	9.3%	2.9%	2.8%	2.1%	1.7%	21.2 %	22.5 %
Elder Subsidy Program	44.3 %	43.1 %	28.1 %	28.9 %	6.9%	7.5%	4.8%	4.1%	5.6%	5.5%	10.3 %	10.9 %
Cultural and Traditional Program	44.6 %	44.6 %	27.9 %	29.9 %	9.0%	7.9%	4.8%	4.7%	3.4%	2.6%	10.3 %	10.3 %
Infrastructure Program	30.0 %	30.9 %	28.9 %	27.8 %	11.1 %	10.7 %	6.6%	6.8%	6.9%	7.3%	16.4 %	16.6 %
Arena operation and maintenance	30.5 %	31.6 %	36.6 %	33.8 %	8.2%	8.4%	6.9%	7.5%	5.8%	5.8%	11.9 %	12.9 %

The satisfaction levels here were only moderate, although it should be pointed out that many of the people asked this question were not at all familiar with the agreement and therefore may have had difficulty responding positively to many of the items. Some other points to note from the household survey are:

- Satisfaction was highest with the Country Food Program with 85% of people saying they were either very or somewhat satisfied.

- People were also fairly satisfied with the Elder Subsidy Program, the Cultural and Traditional Program, the arena development program and the future development planning process.
- Overall satisfaction with the Agreement was the lowest, although this is due in part to the high percentage of “don’t know” responses to this question (32%).

The survey then moved on to the use of funds in enterprises and investments. The following are the results for the household survey, however, the total responses were similar.

- Most respondents (82%) felt that NCN members should participate in determining how profits should be used. The higher the level of education the greater the desire for input.
- When they were asked how that participation should occur, they most often said that there should be “meetings and workshops to provide information and get people’s opinions” (43%). Other mentions were “voting” (16%), “participation in decision by all NCN members” (13%) and “need more information about how money is spent” (13%). This last response differs from the first in that they did not specify how that information should be disseminated.
- Most people had not attended any (65%). Among those 16-19 years of age, 84% said they had not attended any meetings. Married respondents were more likely to have attended (56%) than single (30%) or common law (28%).
- When asked why they had not attended Community Approval Process meetings, respondents gave a variety of reasons, including “never heard of them” (21%), “not interested” (14%), “not informed about location” (9%), “can’t get time off work” (11%), and “out of town” (12%).

Venture Investments

A short series of questions was then asked about specific ventures in which Trust funds have been invested. These were:

How do you feel about the following ventures in which Trust funds have been invested?

	Proud to have it		Don't think we should have it		Neutral		Don't Know	
	Household Sample	Total responses	Household Sample	Total responses	Household Sample	Total responses	Household Sample	Total responses
OT Gas	82.8%	79.6%	0.3%	0.1%	13.8%	15.1%	3.2%	5.2%
Mystery Lake Hotel	76.4%	72.6%	2.1%	2.6%	13.5%	13.4%	8%	11.4%
Gaming Commission	62.9%	64.9%	7.7%	6.5%	21%	20.3%	8.5%	8.1%
Lucky Dollar Store	81.2%	81.7%	2.4%	2.3%	13.3%	11.3%	3.2%	4.6%

	Proud to have it		Don't think we should have it		Neutral		Don't Know	
	Household Sample	Total responses	Household Sample	Total responses	Household Sample	Total responses	Household Sample	Total responses
Footprint Engineering	60.7%	58.3%	1.3%	1.5%	16.2%	16.2%	21.8%	23.9%
Nelson House Forest Products	82.2%	79.0%	0.5%	0.9%	8.8%	9.1%	8.5%	11.1%
Wapis u Air	64.5%	62.4%	2.4%	3.2%	16.2%	17.5%	17.0%	17.0%
Meetah Building Supplies	77.7%	74.8%	1.3%	1.6%	10.6%	10.8%	10.3%	12.8%

As the table shows, people generally felt very positive about these ventures. Only the Gaming Commission elicited a significant amount of disapproval (8% of the household survey and 7% of the total responses), with younger respondents (under 34) more disapproving than older respondents.

The section on specific ventures ended with a series of questions about how people think these ventures have benefited the community. These results are available in the detailed tables for those who wish to examine them more closely.

Treaty Land Entitlement Agreement

The results of questions about familiarity with the Treaty Land Entitlement Agreement and its implementation were similar for both the household survey and total responses. The household survey results are presented below, with reference to the total responses where relevant.

- Most people did not feel they were familiar with this agreement – 51% of both the household survey and the total responses said they were “not at all familiar” and only 6% of the household survey and 7% of the total responses said they were “very familiar”. Greatest level of familiarity was found with higher income households and higher education respondents.
- Not surprisingly, when they were asked how satisfied they were with the use of TLE money, a high percentage of people said “Don’t know” (37%). Among those who did answer, satisfaction was moderate
- Similarly, when they were asked about satisfaction with the land selection process, the most frequent answer was “Don’t know” (34%). Again, those who did have an opinion were more likely to be satisfied than dissatisfied.

Otetiskiwin Trust Agreement

When asked about the Otetiskiwin Trust Agreement, respondents to the household survey gave the answers highlighted below. The results of the total responses are also highlighted where relevant.

- People were also unfamiliar with this agreement - 54% of the household survey and 52% of the total responses were “not at all familiar” and only 6% of the household survey and total responses were “very familiar”.
- Even though they were not familiar with the details of it, respondents were clearly not satisfied with the amount of distribution - 59% said they were “very dissatisfied” and another 14% said they were somewhat dissatisfied.
- On the other hand, people seemed to be moderately satisfied with the projects funded (51% very or somewhat satisfied).
- When asked what should happen to the Otetiskiwin Trust in the future, most said “retain trust and increase distribution” (53% of the household survey and 54% of the total responses). The next most frequent answers were to “spend money on community projects” (23% of the household survey and 24% of the total responses) and to “maintain as is” (18% of the household survey and 17% of the total responses).

Country Food Use

A series of detailed questions about Country Food use was also included. The analysis of these results is beyond the scope of this report, but it is worth mentioning again that satisfaction with this program was very high and that 78% of people in both the household survey and the total responses said that if more food was available they would use it.

Social/Education/Recreation Issues

Social Issues

Social issues were covered with a series of agree-disagree items. These items and their results were as follows:

Please tell me how concerned you are with the following social issues in Nelson House?

	Very Concerned		Somewhat Concerned		Not Very Concerned		Not At All Concerned		Don't Know	
	Household Sample	Total responses	Household Sample	Total responses	Household Sample	Total responses	Household Sample	Total responses	Household Sample	Total responses
Housing shortage	85.7%	85.6 %	10.3 %	10.7 %	2.1%	1.7%	0.8%	1.0%	1.1%	1.0%
Unemployment	94.2%	93.4 %	4.0%	4.8%	0.3%	0.5%	0.5%	0.4%	1.1%	1.0%
Vandalism	91.8%	88.8 %	5.6%	8.2%	1.6%	1.7%	0%	0%	1.1%	1.2%
Theft	89.9%	87.7 %	7.2%	9.1%	1.9%	1.8%	0%	0.1%	1.1%	1.2%

	Very Concerned		Somewhat Concerned		Not Very Concerned		Not At All Concerned		Don't Know	
	Household Sample	Total responses	Household Sample	Total responses	Household Sample	Total responses	Household Sample	Total responses	Household Sample	Total responses
Assault and sexual assault	90.2%	90.2 %	5.8%	5.0%	1.9%	1.8%	0%	0.4%	2.1%	2.0%
Setting fires	85.7%	83.4 %	9.8%	10.2 %	2.1%	3.6%	0.5%	0.7%	1.9%	2.1%
Sniffing and illegal drug use	85.1%	86.0 %	10.6 %	9.3%	1.6%	2.5%	1.1%	0.7%	1.6%	1.5%
Alcohol abuse	86.7%	86.7 %	8.8%	8.1%	2.7%	3.0%	0.5%	0.7%	1.3%	1.5%
Spousal abuse	85.7%	84.9 %	7.4%	8.4%	3.2%	3.1%	0.8%	0.6%	2.9%	3.1%
Child abuse	91.0%	90.7 %	5.0%	5.5%	1.9%	1.6%	0%	0.1%	2.1%	2.8%
Elder Abuse	90.2%	89.1 %	5.0%	5.2%	1.3%	1.8%	1.3%	1.1%	2.1%	2.8%
Suicide	89.4%	89.4 %	8.0%	6.8%	0.8%	0.9%	0.5%	1.0%	1.3%	2.0%
Poverty	88.9%	88.1 %	9.0%	9.0%	0.8%	0.9%	0.3%	0.2%	1.1%	1.8%
Poor parenting	89.4%	86.6 %	7.2%	9.3%	1.6%	1.5%	0.5%	0.5%	1.3%	2.1%
Lack of volunteers	70.8%	68.8 %	20.4 %	19.4 %	3.2%	5.9%	2.9%	2.7%	2.7%	3.2%
Family breakdown	77.7%	76.9 %	16.2 %	16.0 %	2.4%	3.3%	0.8%	0.7%	2.9%	3.1%
Fetal Alcohol Syndrome	90.5%	89.3 %	6.6%	7.1%	1.1%	1.0%	0%	0%	1.9%	2.6%
Teenage pregnancy	84.6%	82.9 %	10.3 %	10.7 %	1.6%	3.1%	1.9%	1.4%	1.6%	2.0%

Clearly, these matters were of considerable concern to everyone. Even the item of lowest concern - “lack of volunteers” - had only 6% of the household survey and 9% of the total responses saying they were not concerned about it.

Education

There were four open-ended questions in this section, which asked people what they would like the school system in Nelson House to do and how well it is doing these things at present. Respondents provided a variety of answers and these are illustrated in the detailed tables in the attached appendices. The main impression, however, is that people are concerned about a number of different aspects of the education system and do not generally think the system is doing as well as they would like.

In terms of the Nursery to Grade 8 school system, people primarily wanted the school to “teach Cree language” (15% of both the household survey and total responses), “encourage students to stay in school” (15% of the household survey and 14% of the total responses), and “teach about Cree culture” (10% of both the household survey total responses).

In terms of the Grade 9 to Grade 12 school system, people primarily wanted the school to “offer more courses” (8% of the household survey and 9% of the total responses), “return to the old school system (9% of both the household survey and total responses)”, “have more graduates” (11% of both the household survey and total responses) and “encourage students to stay in school” (13% of the household survey and 11% of the total responses).

There was also a series of agree-disagree questions in this section to address specific aspects of the school system. These were:

Please tell me how satisfied you are with each of these items relating to the school system.

	Very Satisfied		Somewhat Satisfied		Neither		Somewhat Dissatisfied		Very Dissatisfied		Don't Know	
	Household Sample	Total responses	Household Sample	Total responses	Household Sample	Total responses	Household Sample	Total responses	Household Sample	Total responses	Household Sample	Total responses
How long students stay in school	6.9%	6.5%	16.4%	16.6%	11.7%	10.2%	22.3%	20.9%	35.0%	36.5%	7.7%	9.2%
Legal authority to discipline children	11.1%	11.4%	22.3%	22.3%	9.5%	10.5%	18.6%	17.2%	26.5%	27.1%	11.9%	11.6%
Ability to deal with learning disabilities	21.5%	22.1%	32.9%	32.7%	4.2%	6.0%	13.3%	12.2%	13.3%	12.2%	14.9%	14.8%
Parental involvement	16.4%	15.5%	22.5%	22.1%	7.7%	9.1%	19.1%	17.5%	24.9%	25.7%	9.3%	10.1%
Course options	15.6%	16.1%	27.1%	26.6%	7.2%	8.2%	13.3%	14.3%	18.3%	16.1%	18.6%	18.7%
Quality of instruction	17.2%	15.7%	29.7%	31.5%	12.5%	12.5%	14.1%	14.0%	11.4%	10.3%	15.1%	15.9%
Quality of curriculum	15.9%	15.4%	28.9%	30.0%	11.1%	11.6%	13.5%	14.3%	12.2%	10.8%	18.3%	18.0%
Quality of administration	17.5%	17.6%	32.1%	31.6%	13.0%	12.8%	11.4%	12.1%	10.9%	10.0%	15.1%	16.0%
Quality of support services	20.2%	19.7%	30.8%	27.6%	9.5%	10.6%	11.4%	11.7%	13.3%	14.0%	14.9%	16.5%
Quality of educational leadership	20.7%	19.3%	29.2%	30.1%	10.9%	11.3%	10.3%	11.3%	12.5%	11.4%	16.4%	16.5%

In addition, people between the ages of 16-35 were also asked four questions about their own school experience. These were:

Please tell me to what extent you agree or disagree with the following statements.

	Strongly Agree		Agree		Neither		Disagree		Strongly Disagree		Don't Know	
	Household Sample	Total responses	Household Sample	Total responses	Household Sample	Total responses	Household Sample	Total responses	Household Sample	Total responses	Household Sample	Total responses
Expected to get to school on time	37.4%	35.9%	19.6%	20.7%	1.6%	1.7%	0.5%	0.5%	0.3%	0.1%	40.6%	41.1%
Expected to attend classes	37.7%	35.8%	19.6%	21.0%	1.3%	1.1%	0.5%	0.6%	0.3%	0.1%	40.6%	41.3%
Expected to get a passing grade	37.4%	35.8%	18.6%	20.0%	2.5%	2.1%	0.8%	0.6%	0%	0%	40.6%	41.5%
Expected to achieve good marks in	35.0%	33.6%	22.0%	22.6%	3.4%	3.0%	1.1%	0.7%	0.3%	0.4%	38.2%	39.7%

school													
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Recreation

Finally, people were asked whether they thought there was enough or not enough of a series of 13 different things related to recreation in Nelson House. The results were as follows:

Please indicate whether we have too much, enough, or not enough of the following facilities and programs in Nelson House.

	Too Much		Enough		Not Enough		Don't Know	
	Household Sample	Total responses	Household Sample	Total responses	Household Sample	Total responses	Household Sample	Total responses
Volunteers	0.3%	0.4%	21.8%	22.9%	67.1%	64.3%	10.9%	12.4%
Funding	1.9%	1.1%	22.5%	22.4%	56.8%	54.9%	18.8%	21.6%
Facilities	0%	0%	29.2%	30.5%	60.5%	58.4%	10.3%	11.1%
Winter recreation programs	0.5%	0.7%	37.7%	37.1%	53.3%	51.0%	8.5%	11.1%
Spring recreation programs	0.5%	0.5%	33.4%	33.1%	57.8%	54.6%	8.2%	11.8%
Summer recreation programs	0.5%	0.5%	50.4%	48.6%	42.4%	41.9%	6.6%	9.0%
Fall recreation programs	0.5%	0.2%	38.2%	39.2%	52%	48.3%	9.3%	12.2%
Winter festivals	0.5%	0.5%	67.4%	66.7%	26.8%	26.0%	5.3%	6.9%
Summer festivals	0.3%	0.1%	69.0%	68.9%	24.9%	24.2%	5.8%	6.8%
Traditional dancing	0.5%	0.9%	17.5%	19.1%	65.8%	61.4%	16.2%	18.7%
Sweats	1.3%	1.4%	20.7%	22.3%	50.1%	47.1%	27.9%	29.3%
Powwows	0.5%	0.9%	35.5%	35.1%	46.9%	45.8%	17.0%	18.3%
Drum groups	0.5%	0.6%	14.3%	15.5%	64.7%	60.9%	20.4%	23.0%

When asked what other programs or facilities are needed, the main answers were an indoor swimming pool (14%), greater interest and participation by NCN members (15%) and more funding (15% for the household survey and 14% for the total responses).

Summary Conclusion

The survey results indicate that, overall, NCN members living in Nelson House are quite positive about the future of their community. Reasons for such a good outlook include

job opportunities, community economic development and the proximity of family and friends.

To the extent that future hydro-electric developments are understood at this point in time, many residents have a positive outlook about the economic possibilities that may accompany these developments. It should be noted, however, that there is a significant group that remains undecided about the value of these projects. Local priorities in terms of future hydro-electric developments include, among other things, limiting flooding, protecting important sites, protecting water quality, maintaining the beauty of the area, shoreline clearing and the management of debris.

It appears from the results that existing agreements between NCN, government (provincial and/or federal) and/or Manitoba Hydro are not well understood by community members. There is, however, moderate to high satisfaction with specific elements of these agreements, such as investments and community programs.

The results also indicate that a large number of serious social issues are of considerable concern to everyone interviewed. In addition, the education system in Nelson House was also a concern to many people, with several respondents indicating that the school system is not doing as well as they would like.

Applying the Survey Results

The survey instrument was quite detailed, and included a large number of open-ended questions intended to address the community's concerns from a number of different angles. The resulting dataset is correspondingly large and complex, and provides an opportunity for many interesting and detailed analyses of the opinions of community members. In particular, results in different components of the survey instrument can be used for a variety of purposes, thus preventing the need to undertake additional community-wide surveys.

Planning for Future Development

One of the original intents of the survey was to understand NCN members' views and priorities about their community, future hydro-electric developments, and the effectiveness of past agreements with governments and/or Manitoba Hydro for the purposes of planning and negotiating for future developments.

NCN is negotiating with Manitoba Hydro to develop an Agreement-In-Principle (AIP) meant to guide the discussions leading to a Project Development Agreement on future development projects. The results of this survey provide Chief and Council and the NCN Future Development Team with relevant information about the issues that community

members think are important to include in the AIP. Since the AIP will be subject to a community referendum before it is signed by Chief and Council, including community concerns from the outset will improve the likelihood that this agreement receives community approval.

The survey results can also be used to help plan for future development if they do proceed. In addition to indicating the issues community members think should be considered if these projects are developed, they also highlight the misconceptions and expectations community members associate with these projects. Community misconceptions about the projects indicate areas where better communication about the projects is needed so members have a proper understanding about what future development entails. Similarly, expectations, most notably perceived benefits, of the projects indicate what community members think they will gain if these projects proceed. The survey results indicate areas where members have unrealistically high expectations of these projects and leadership can use these to determine areas where more communication is needed about the true impacts of these projects

Community Development Planning

The first section of the survey highlights what NCN members like and do not like about living in Nelson House, what they would like to see changed and what would improve the community the most. Leadership can use these results to develop comprehensive community development plans that go beyond land-use planning, to address socio-economic and health issues. The frequency of particular answers also provides a measure of the importance community members place on addressing particular issues.

Strategic Planning for Education

An entire section of the survey was devoted to the issue of education in Nelson House, an area of extreme importance to many residents. The results of this section indicate what community members want from their local school system, but also what they perceive to be positive and negative components of the school system. The Nelson House Education Authority can use these results to develop long-term strategic plans that incorporate aspects considered to be important by local residents. In addition, they can use the results to identify and address those issues that are perceived to be a problem by local residents. As with future development planning, the Education Authority can also use the results to determine area of misconception that need to be addressed through more explicit communication strategies.

Recreation Program Development

Recreation is extremely important to Nelson House residents. The results of the recreation portion of the survey indicate areas where residents would like to see more

programs developed. These results can be used to determine the types of programs that warrant budget priority and that will be appreciated and used by the community.

Country Foods Program

The survey results indicate that the Country Foods Program is quite popular among community members. Managers of this program can use the survey results to determine what other kinds of country foods community members would like to see made available through this program.

P:\P539(2)\7. Wuskwatim, Notig\7.1 Generating Station\7.1.6 Nelson House\7.1.6.3 NCN Opinion Survey\Edited DIMARK report on NCN Opinion Survey - First Pass.doc

2001 NCN OPINION SURVEY RESULTS

- Members Residing in South Indian Lake -

Submitted to:
NCN Future Development Team

Submitted by:
Dimark Research Inc.
InterGroup Consultants Ltd.

December 01

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1.0 BACKGROUND

In May of 2001, Nisichawayasihk Cree Nation (NCN) members had the opportunity to vote on an Agreement-In-Principle between NCN and Manitoba Hydro about possible new hydro-electric developments at Taskinigup Falls at Wuskwatim Lake and/or close to the Notigi control structure. To follow up on the results of this vote and to get a better understanding of how NCN members living outside of Nelson House see the benefits and drawbacks of these proposals, the NCN Future Development Team undertook a survey of members living in South Indian Lake, Thompson and Winnipeg. A similar survey was undertaken in May, June and July 2000 of members living on-reserve at Nelson House.

This report outlines the results of the survey of NCN members living in South Indian Lake, who were surveyed between July 30th and August 19th, 2001. Section 2 presents the survey methodology. The survey was conducted in two stages - a random sample, followed by a survey of all remaining NCN members living in South Indian Lake. This approach is the same as the one that was used during the 2000 NCN Opinion Survey in Nelson House. Section 3 provides a profile of the residents who responded to the survey. In total, 137 interviews were completed representing approximately one-third of NCN members aged 16 years or over living in South Indian Lake. Survey results, which are presented in graphic form and discussed in Section 4, make up the largest part of this report.

With the sample of 137 NCN members in South Indian Lake, one can be 95 per cent certain of an accuracy rate of ± 6.88 (using a finite population calculation) 19 times out of 20.

For more information on this research project, please contact:

InterGroup Consultants Ltd. at
(204) 942-0654.

2.0 SURVEY METHODOLOGY

2.1 Survey Instrument

The survey was designed to elicit the views of NCN members living in South Indian Lake about the following topics:

- What they have heard about the proposed hydro developments, how they heard about these developments and how communication about the developments could be improved;
- Concerns and benefits related to the proposed hydro developments;
- Possible migration to Nelson House or Thompson if either of the proposed projects were to proceed;
- Interest in employment, training and business opportunities related to the proposed developments;
- Trust of Manitoba Hydro;
- Knowledge and experience with unions;
- Manitoba Hydro Training and Employment;
- Education and Training;
- Use the NCN Resource Management Area and the South Indian Lake Registered Trapline Zone; and,
- Other issues and concerns, including possible reasons for the outcome of the AIP vote in South Indian Lake.

The survey instrument was detailed. It included 57 questions, some of which had multiple parts, and the majority of which were open-ended. For example, Question 13 asked respondents: “If the Notigi project were to be built, would you have any concerns?”, with the opportunity to answer yes or no and then went on to ask “If yes, what are they?”.

The full survey can be seen in [Appendix 1](#) at the end of this report.

2.2 Survey Approach

All of the surveys were carried out in person, with a Community Consultant asking the questions to respondents and recording their answers. NCN members living in South Indian Lake were hired to conduct the surveys. Of these, 2 were permanent Community Consultants and 4 were temporary Community Consultants hired for this purpose. Community Consultants from Nelson House who are fluent in Cree helped to conduct interviews with NCN Elders living in the community. Staff from InterGroup Consultants Ltd. in Winnipeg provided organizational and advisory support via telephone and one community visit.

Throughout the survey process, information and notification about the survey was placed on local bulletin boards throughout the community.

A two-staged data collection process was used in order to provide for a valid sample, in the event that a complete census of NCN members aged 16 and over in South Indian Lake could not be completed in the short time available (3 weeks). This included a first pass, household survey followed by a second pass of remaining eligible residents.

FIRST PASS SURVEYS:

In the first pass, one person was selected at random from the NCN members living in each household in South Indian Lake and a survey was done with that person. The person to be interviewed was selected in advance based on who had the most recent birthday in that household. All elders were also included in the first pass. In total, 112 of the approximately 176 NCN members in South Indian Lake included in the first pass were surveyed. Of the members on the first pass list, 18 refused to be surveyed and 15 were out of town.

SECOND PASS:

After the first pass was completed, interviewers started over from the beginning, returning to households to complete as many surveys as possible with the remaining eligible respondents (those aged 16 or older) in each household. In total, an additional 25 surveys were completed in the community, providing a total response of 137 surveys, or one-third of eligible NCN members living in South Indian Lake.

All of the completed surveys were coded to facilitate analysis of the results. Community Consultants in South Indian Lake and InterGroup Consultants Ltd. worked together to develop detailed coding lists for the open-ended questions in the survey. Coding of all the open-ended questions in the completed surveys was done by InterGroup Consultants Ltd. Multiple choice questions were coded by Dimark Research Inc. Dimark also inputted all of the results and developed frequency analyses for the responses to each question by the age, sex, education, family status and income of those interviewed.

2.3 Survey Confidentiality

Confidentiality was very important to NCN. In order to keep track of those who were interviewed, survey respondents were asked their names and treaty numbers. This information, however, was gathered strictly as a tracking measure. No names or treaty numbers were ever used in the data analysis portion of the survey process. All of the surveys were identified by randomly assigned numbers once coding was completed.

After coding and data entry were finished, the surveys were placed in sealed boxes. They will be kept at the Winnipeg office of NCN's lawyer for one full year. Following this year, all of the surveys will be destroyed.

3.0 PROFILE OF RESPONDENTS

	2001 NCN Opinion Survey – South Indian Lake			NCN Members Living in South Indian Lake (estimate based on the 1996 Census of Canada) ^{1,2}		
	TOTAL	MEN	WOMEN	TOTAL	MEN	WOMEN
AGE						
16-19	4%	4%	4%	15%	16%	15%
20-24	13%	15%	11%	16%	17%	16%
25-29	15%	15%	13%	16%	16%	15%
30-34	17%	16%	19%	12%	12%	13%
35-39	10%	13%	7%	10%	11%	8%
40-44	10%	13%	7%	9%	9%	8%
45-49	6%	6%	6%	5%	4%	6%
50-54	8%	8%	9%	5%	5%	4%
55-59	3%	3%	4%	3%	2%	4%
60-64	4%	3%	7%	3%	2%	4%
65-69	4%	4%	6%	2%	2%	3%
70+	7%	9%	4%	4%	4%	3%
FAMILY STATUS:						
Single	28%	34%	20%	58%	N/A	N/A
Divorced	2%	0%	6%	1%	N/A	N/A
Married	48%	46%	52%	36%	N/A	N/A
Common law	18%	18%	17%	N/A	N/A	N/A
Widowed	4%	3%	6%	5%	N/A	N/A
HOUSEHOLD INCOME:						
<\$10K	15%	10%	22%	6%	N/A	N/A
\$10-19K	47%	50%	41%	22%	N/A	N/A
\$20-29K	20%	20%	20%	28%	N/A	N/A
\$30-39K	9%	10%	7%	16%	N/A	N/A
>\$40K	10%	10%	9%	28%	N/A	N/A
EMPLOYMENT STATUS:						
Full-time	22%	21%	22%	25% employed FT/PT	35% employed FT/PT	21% employed FT/PT
Part-time/Seasonal	32%	44%	17%			
Unemployed/Actively looking	12%	14%	11%	13%	19%	4%
Unemployed/Not looking	31%	9%	22%	27%	44%	74%
Student	2%	1%	4%	N/A	N/A	N/A
Not stated	9%	9%	6%			

(cont'd)

	2001 NCN Opinion Survey – South Indian Lake			NCN Members Living in South Indian Lake (estimate based on the 1996 Census of Canada) ^{1,2}		
	TOTAL	MEN	WOMEN	TOTAL	MEN	WOMEN
EDUCATION:						
Less than Grade 9	27%	26%	31%	33%	N/A	N/A
Grades 9 to 11	35%	44%	47%	45%	N/A	N/A
Completed Grade 12	18%	20%	15%	4%	N/A	N/A
Not stated	10%	11%	7%			
LEVELS OF POST-SECONDARY EDUCATION OR TRAINING (enrolled or completed)						
Apprenticeship/Journeyman	7%	9%	6%	2%	N/A	N/A
Community college	12%	13%	9%	7%	N/A	N/A
University	4%	4%	2%	9%	N/A	N/A
Other	39%	45%	31%	N/A	N/A	N/A

Source & Notes:

1. NCN membership data for 2000 from Indian and Northern Affairs Canada outlining the population of NCN members of Crown Land (most of whom live in South Indian Lake) was used to estimate the population by age and sex of NCN members living in South Indian Lake.
 2. All remaining data is from the 1996 Census of Canada. It should be noted that Census of Canada data is based on:
 - All residents of South Indian Lake and not just NCN members. (However, approximately 80 per cent of the residents at South Indian Lake are NCN members.)
 - All members ages 15 and over, as opposed to those ages 16 and over.
 - A 20 per cent sample of South Indian Lake residents.
 - For education, the highest level of completed, rather than the highest grade completed, as well as post-secondary education.
- The population characteristics of those surveyed have been compared to the population characteristics of all community members to determine if the sample group is representative of the total population. The population characteristics considered were age and sex distribution, education levels, income and family and employment status.
 - In terms of population distribution by age and sex, the figures in the table above indicate that overall the distribution by age and sex of those interviewed for the survey is similar to that seen in the entire community. The exceptions are the under-representation of youth and the over-representation of older members of the community.

- As for family status among respondents, single persons were under-represented (28% actual versus 58% Census), whereas married respondents were over-represented at 48 per cent versus 36 per cent according to the Census figures.
- Income categories also varied with the lower income brackets being significantly over-represented. Respondents living in households with an annual income of less than \$10,000 represented 15 per cent, versus 6 per cent according to Census figures. On the other end of the scale, higher income bracket respondents were under-represented in this study.
- Education levels of respondents also varied from the 1996 Census figures, with respondents who had completed High School representing 18 per cent, compared to only 4 per cent in the Census figures. Those respondents who indicated they had completed Grades 9-11 were slightly under-represented in this sample.

4.0 DISCUSSION HIGHLIGHTS / RESEARCH RESULTS

This section of the report highlights the main, top level findings of the survey. For those who wish to examine the results for any question in more detail, a copy of the complete questionnaire is attached as [Appendix 1](#) and the results for each question are included in separate bound appendix documents to this report.

The analysis of survey results concentrates mainly on cross-tabulations of the results for each question by age and sex of respondent. Additional cross-tabulations of the results by additional demographic characteristics (e.g., education, employment status) have also been prepared for the survey. Each result is based on the number of people who answered the particular question (referred to in the document as *n*), rather than the total 137 persons interviewed.

For convenience, the results are presented in the order they appeared in the questionnaire, summarized under the following headings:

- Possible Future Hydro Development
- Migration
- Employment Opportunities
- Unions
- Business Opportunities
- Training Opportunities
- Past Manitoba Hydro Training and Employment
- Traditional Activities / Resource Use
- Other Issues and Concerns

4.1 Possible Future Hydro Development

4.1.1 Awareness and Communication of Future Development

In order to determine what NCN members living in South Indian Lake have heard about the proposed Wuskwatim and Notigi projects, as well as the effectiveness of current communication about the proposed future developments, respondents were asked:

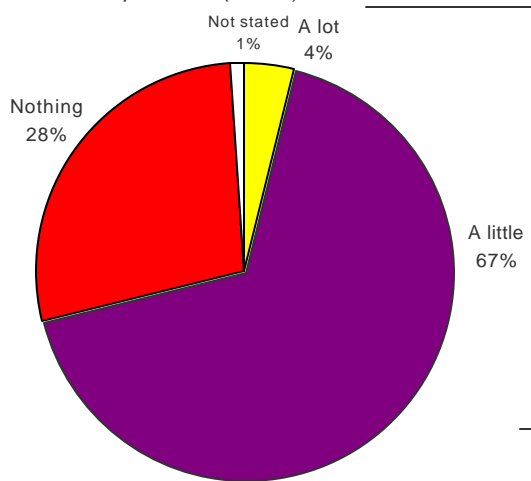
- What they have heard about future development
- How they learned about these developments, and
- Their suggested improvements to current communication about future development.

The following charts and text outline the main results from this section of the survey.

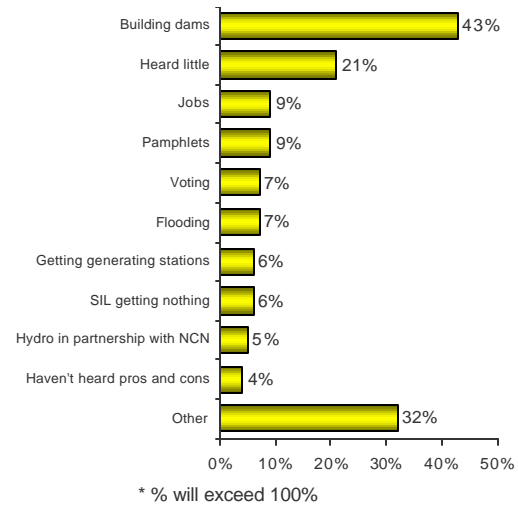
AWARENESS OF PROPOSED HYDRO DEVELOPMENTS

Awareness of Proposed Hydro Developments Total Mentions*

Q6 "What have you heard about the proposed hydro developments at Notigi or Taskinigup Falls? Would you say that you have heard a lot, a little, or nothing at all about these developments?" (n=137)



Q7 "Please tell us what you've heard about these proposed hydro developments." (n=98)



Note: The results cited in the graph above represent the most common responses to Question 7. Readers are invited to refer to the detailed tabular results for a complete list of responses to this open-ended question.

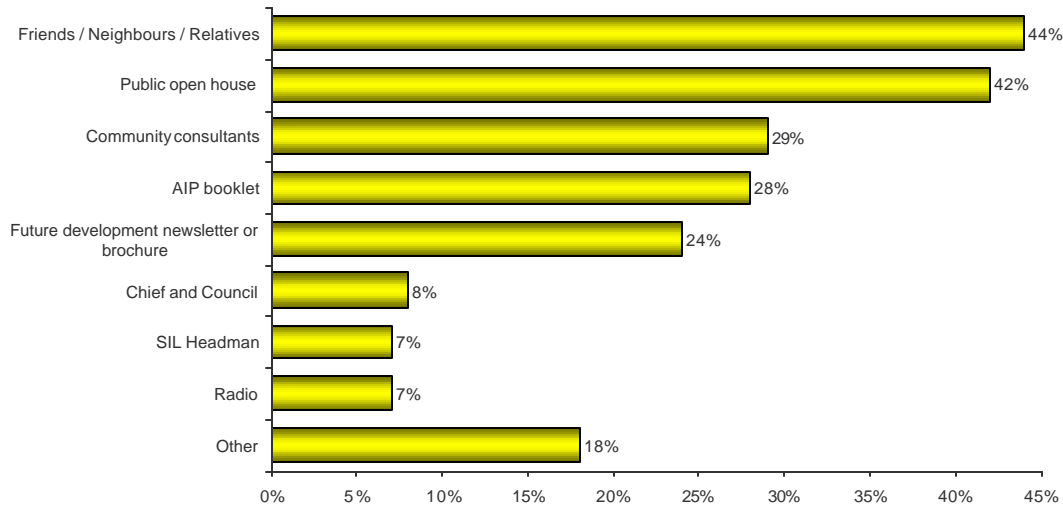
- Seven-in-ten (71%) survey participants have heard something about the proposed Manitoba Hydro developments at Notigi and Taskinigup Falls. Few South Indian Lake respondents (4%) claim to have acquired a lot of information about these projects.
- It appears that men (78%) and older respondents (80% among 55+ years) are more likely to have heard something about these developments.

- Those who had heard something about the Notigi and Taskinigup projects were asked what specific information they had learned. Most responses pertained to dams. Forty-three per cent of respondents stated that the projects involved dam construction, while five per cent claimed to have heard that dams were being built in partnership with NCN and a single respondent (1%) mentioned that a decision has yet to be made on dam construction. One in five respondents (21%) had heard very little about these possible hydro developments.
- Dam construction was most likely to be mentioned by younger (51% among 16-34 years) and middle-aged respondents (45% among 35-54 years). Older respondents were more likely to state they had heard very little detailed information (50% among 55+ years).
- When South Indian Lake residents who had heard something about the proposed Notigi and Taskinigup Falls projects were asked what they thought of these projects, one in five respondents (22%) stated that they think the projects should not proceed. Ten per cent of respondents noted the employment associated with the projects.

Sources of Information About Future Development

Total Mentions* (n=98)

Q9 "How did you learn about these developments?"



* % will exceed 100%

- Word-of-mouth communication between friends, neighbours and relatives (44%) and information gathered through the Open House forum (42%) were the two most common avenues of information for those who had heard something about the possible Hydro development projects at Notigi and Taskinigup Falls. Other sources of information identified with some frequency included: Community Consultants (29%), the AIP booklet (28%) and the Future Development newsletter (23%).
- Those most likely to have gathered their information through word-of-mouth channels were younger (51% among 16-34 years) and older (60% among 55+ years). Age correlates quite strongly with the likelihood that information was gained through an Open House (21% among 16-34 rising to 70% among 55+years).

IMPROVING COMMUNICATION ABOUT FUTURE DEVELOPMENT

Satisfaction with Amount of Information

(n=98)

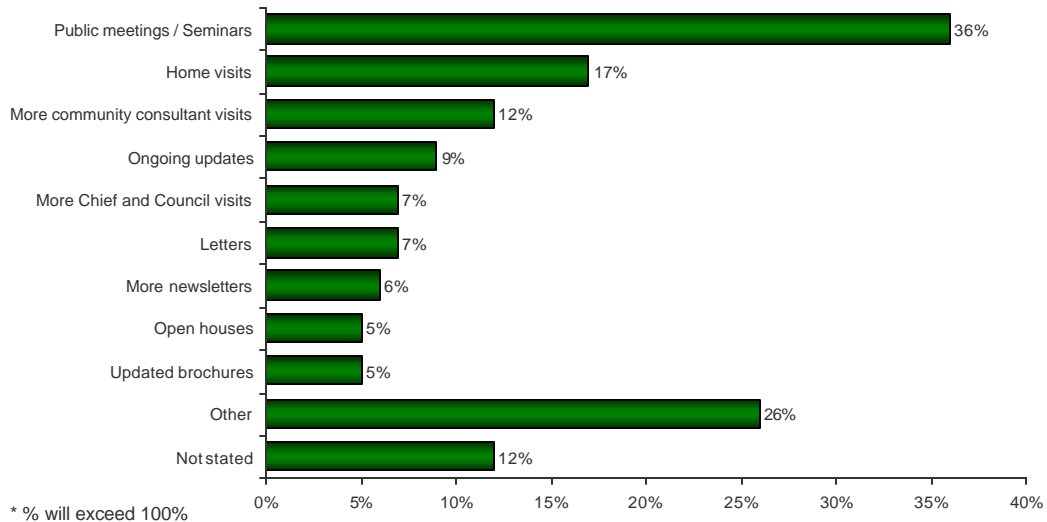
Q10 "Do you feel that you are getting enough information about future development?"



- Fully three quarters of respondents (76%) feel they are *not* getting enough information about future Hydro developments.
- Women (91%) were more likely than men (69%) to feel that they were not receiving enough information regarding future hydro development activities.

Suggestions for Improvements to Communications Total Mentions *

Q11 “How could we improve communication with you about future development?” (n=137)



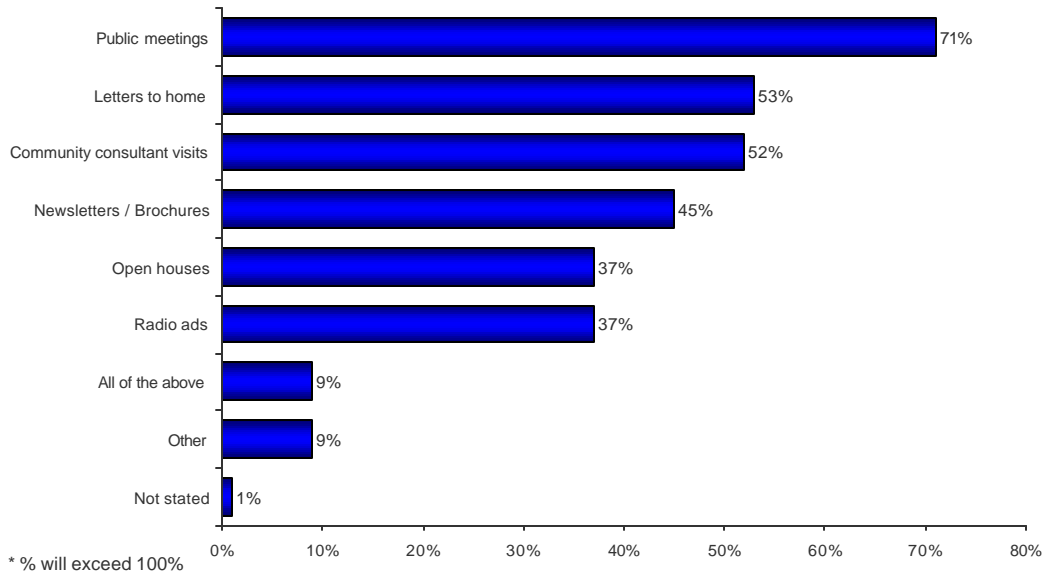
Note: The results cited in the graph above represent the most common responses to Question 11. Readers are invited to refer to the detailed tabular results for a complete list of responses to this open-ended question.

- When asked for advice on how to improve communication about future Hydro developments greater than one-third (36%) of respondents suggested the use of “public meetings and seminars”. A further five per cent mentioned the conceptually similar “open houses”.
- Middle-aged (45% for 35-54 years), older respondents (48% for 55+ years) and women (43% vs 31% among men) were most likely to favour the public meeting approach as a mechanism for improving communications on Future Development.
- More home visits (17%), visits from Community Consultants (12%) and visits from Chief and Council (7%) were also suggested as improvements.

Preferred Ways to Distribute Information

Total Mentions*

Q12 “What are the best ways for us to distribute information about future developments?” (n=137)



- When asked what the best ways are for the Future Development Team to distribute information, survey participants pointed once more to “public meetings” (71%) and “open houses” (37%) as being effective. Other suggested information channels included “community consultant visits” (52%), “newsletters and brochures” (45%) and “radio ads” (37%).
- The public meeting forum held the greatest appeal for respondents aged 55 years and older (84%).

4.1.2 Priorities in Looking at Future Hydro Developments

Respondents were asked to comment on what they think should be priorities for the NCN Future Development Team in their consideration of the proposed hydro developments.

This included questions about:

- Concerns about the proposed projects, as well as any perceived benefits.
- Whether they are more concerned about the Notigi Project, the Wuskwatim Project or equally concerned about both projects.
- The importance of a number of items related to the proposed developments.
- Trust of Manitoba Hydro.

Each of these is discussed in turn.

CONCERNS AND BENEFITS

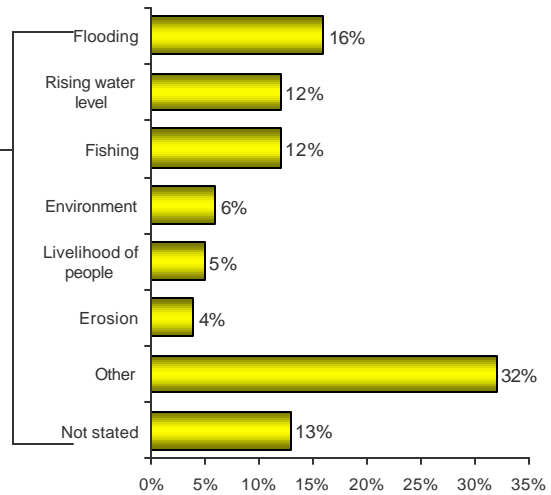
Concerns About The Proposed Notigi Project
Total Mentions*

Q13a “If the Notigi project were to be built, would you have concerns? If yes, what are they?”
(n=137)



* % will exceed 100%

Q13c “Of these, what would be your biggest concern?”
(n=94)



Note: The results cited in the graph above represent the most common responses to Question 13c. Readers are invited to refer to the detailed tabular results for a complete list of responses to this open-ended question.

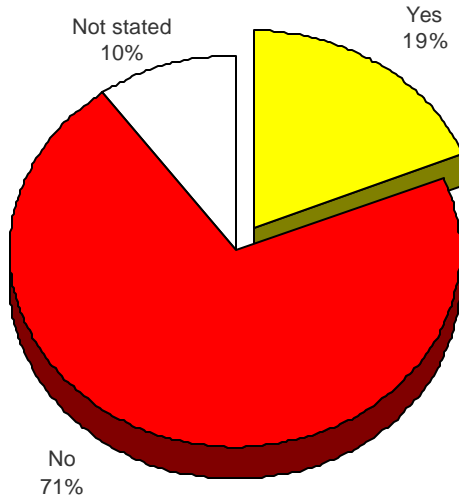
- When asked directly if they have concerns about the Notigi project in the event that it is built seven-in-ten (69%) respondents stated that they would.
- Those employed on a full-time (83%) or a part-time (75%) basis were somewhat more inclined to have concerns about the Notigi project.
- When asked as to what their biggest concern would be if the Notigi project were to be developed, a significant number of items were mentioned. Those mentioned

with some frequency included flooding (16%), fishing (12%), and rising water levels (12%).

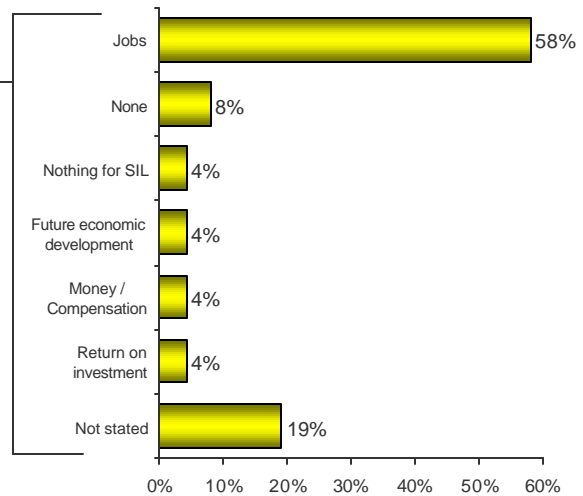
- Older respondents (35% among 55+ years) and women (26%) were most inclined to single out concerns over flooding, as were those employed full-time (20% versus 3% among part-time workers).

Perceived Benefits of the Proposed Notigi Development Total Mentions**

Q14a) “If the Notigi development were built, would you see any benefits? If yes, what are they?”
(n=137)



Q14c) “Of these, what would you say is the biggest benefit?”
(n=26*)



* Caution Small Base

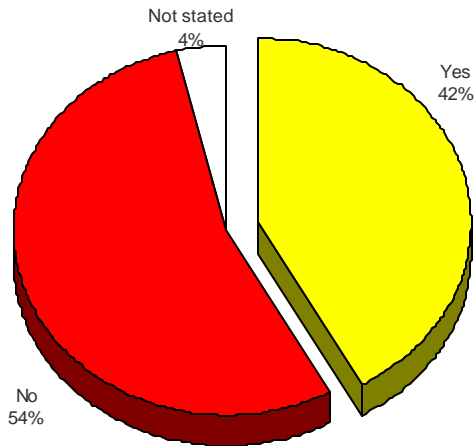
** % will exceed 100%

Note: The results cited in the graph above represent the most common responses to Question 14c. Readers are invited to refer to the detailed tabular results for a complete list of responses to this open-ended question.

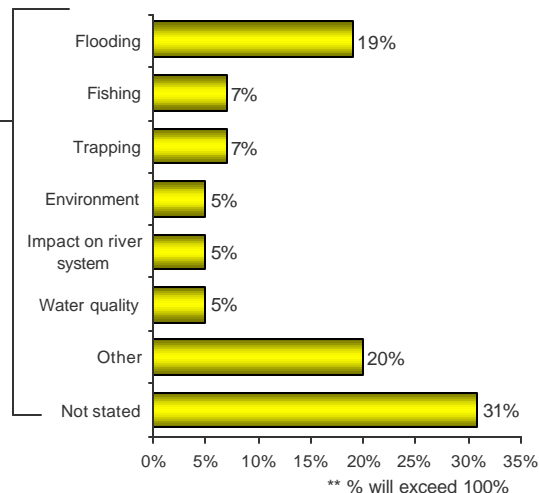
- One in five (19%) South Indian Lake respondents associated benefits with the potential Hydro developments at Notigi.
- Younger respondents (23% among 16-34 years) and men (24%) were more inclined to view the Notigi project as having potential benefits.
- The comparatively small number of respondents who associated benefits with this project were asked to describe the largest single benefit to be gained by this project. Nearly six-in-ten (58%) respondents pointed to jobs.

Concerns About Proposed Wuskwatim Project Total Mentions**

Q15a "If the Wuskwatim project were built, would you have concerns?" (n=137)



Q15c "Of these, what would be your biggest concerns?" (n=58*)



* Caution Small Base

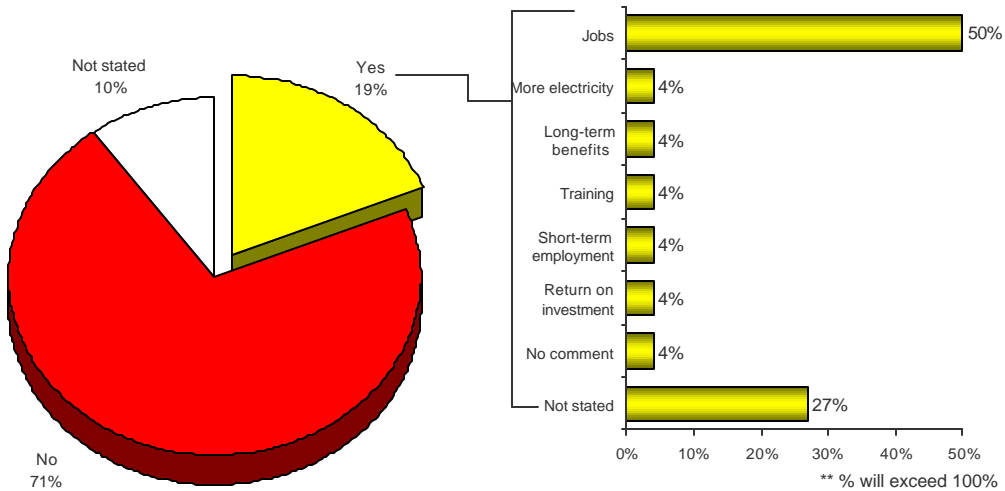
Note: The results cited in the graph above represent the most common responses to Question 15c.. Readers are invited to refer to the detailed tabular results for a complete list of responses to this open-ended question.

- When compared to the Notigi project, fewer respondents stated that they have concerns about the Wuskwatim project (42%).
- Once again those employed either full-time (50%) or part-time (45%) were somewhat more inclined to have concerns about this project proceeding.
- Flooding (19%) was the biggest concern most likely to be associated with the potential development at Wuskwatim.
- Concern over flooding at Wuskwatim was highest among women (27%) and those employed on a full-time basis (40%).

Perceived Benefits of the Proposed Wuskwatim Project Total Mentions**

Q16a "If the Wuskwatim Project were built, would you see any benefits? If yes, what are they?" (n=137)

Q16c "What would you say is the biggest benefit?" (n=26*)

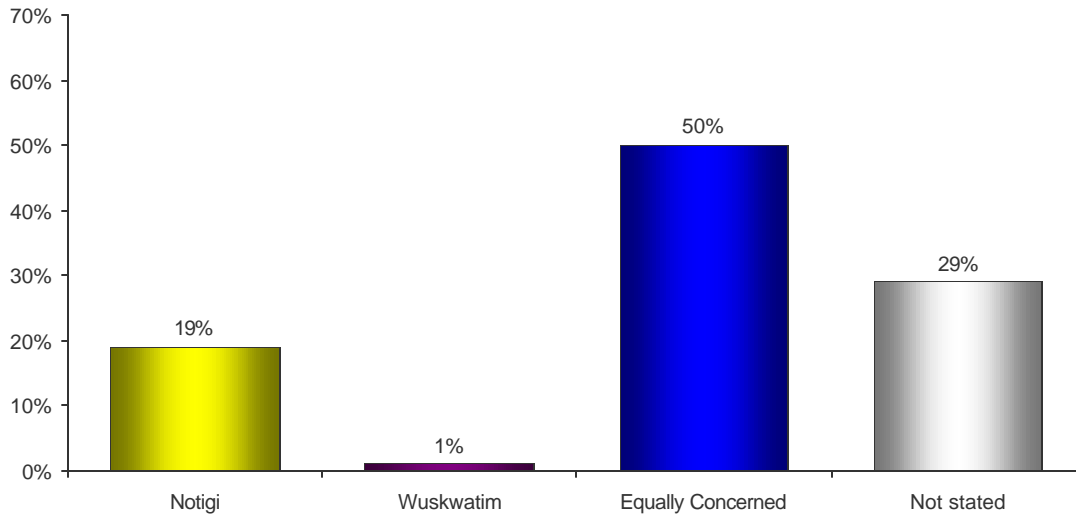


Note: The results cited in the graph above represent the most common responses to Question 16c. Readers are invited to refer to the detailed tabular results for a complete list of responses to this open-ended question.

- A companion question concerning potential benefits to be gained by the Wuskwatim project generated results that are virtually identical to those pertaining to benefits of the proposed development at Notigi. Nineteen per cent of South Indian Lake respondents see benefits associated with the Wuskwatim project.
- Age was less pronounced as a correlate with perceived benefits of this project. However, men (25%) were once again more likely to view some aspects of this project favourably.
- As with the proposed Notigi development, jobs (50%) were seen as the single greatest benefit among those who cited the potential for benefits associated with the proposed Wuskwatim project.

Relative Level of Concern About Each of the Proposed Developments

Q17a “Would you say you are more concerned about the proposed Notigi project or the proposed Wuskwatim project?” (n=137)



- South Indian Lake respondents were asked if they are more concerned about the Notigi generating station project or the Wuskwatim generating station project. Fully half (50%) stated that they are equally concerned about both projects. Nineteen per cent identified Notigi specifically, while just over one per cent (2 respondents) associated a greater level of concern with the Wuskwatim project.
- Those most likely to be equally concerned about both projects were older respondents (64% among 55+ years) and women (56%).
- Among those who said both projects are of equal concern, survey respondents were most inclined to point to flooding (29%). This concern topped a long list of other concerns, many of which were also related to damage associated with increased or fluctuating water levels.

- Among the comparatively small number of survey participants (26 respondents) who indicated they are more concerned about the proposed Notigi project, a majority (58%) stated that their concern stemmed from the proximity of this project to the community of South Indian Lake.
- The two survey respondents who had a greater concern about the Wuskwatim project cited environmental concerns and the related concern of damage to the land (50% each).

IMPORTANCE OF ISSUES RELATED TO FUTURE DEVELOPMENT

Survey respondents were presented with a list of issues associated with potential future hydro developments and asked to rate the importance of each on a scale from “not at all important” to “very important”. For the purposes of comparison and reporting, items on this list have been grouped as follows based on the nature of the issue:

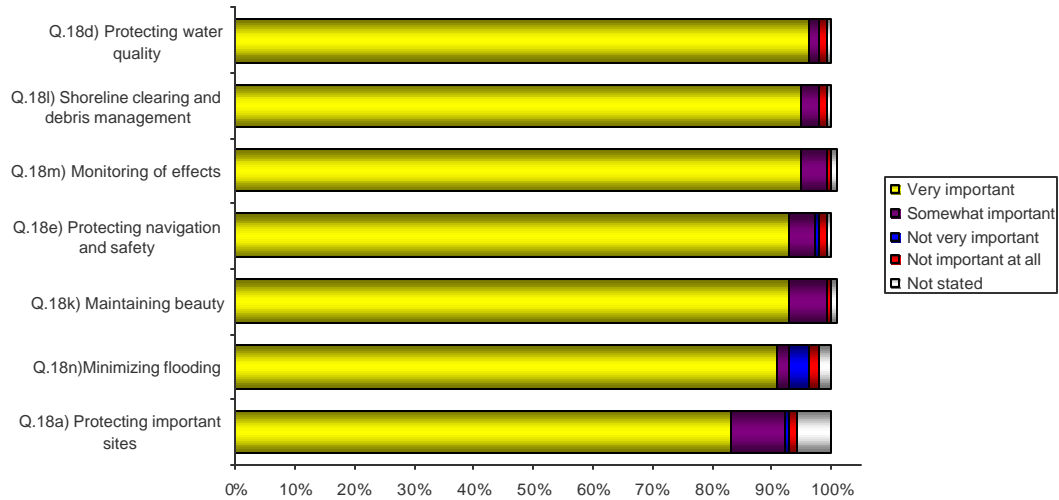
- Importance of environmental factors
- Importance of plant and animal factors
- Importance of human factors
- Importance of personal factors
- Importance of NCN ownership

Each of these is discussed in the text and tables below.

Respondents were asked at the completion of this list whether the items they indicated as important related primarily to the proposed Notigi project, the proposed Wuskwatim project or equally to both. Most respondents (71%) indicated that both projects are of equal concern. Fourteen per cent indicated that the items noted as important related primarily to the Notigi project, while only one respondent commented that the Wuskwatim project was of greater concern.

Importance of Environmental Factors

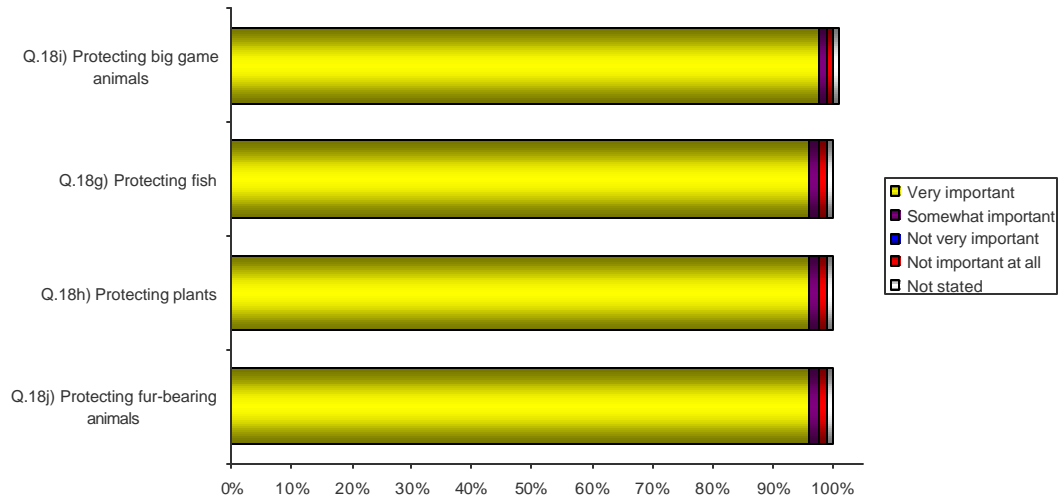
Q18 “The Future Development Team is thinking about a number of things regarding future hydro developments and would like to know what’s important to you. Please tell me how important the following things are to you? The first is: Would you say that “insert option” is very important, somewhat important, not very important, or not important at all?” (n=137)



- It is evident that all factors relating to the environment generally are regarded as having a high level of importance. All but one item is regarded as very important by 90 per cent or more of the respondents in the survey.
- The percentage of respondents indicating an issue is “very important” are: “protecting water quality” (96%); “shoreline clearing and debris management” (95%); “monitoring of effects” (95%); “protecting navigation and safety” (93%); “maintaining beauty” (93%); “minimizing flooding” (91%); and “protecting important sites” (83%).

Importance of Plant and Animal Factors

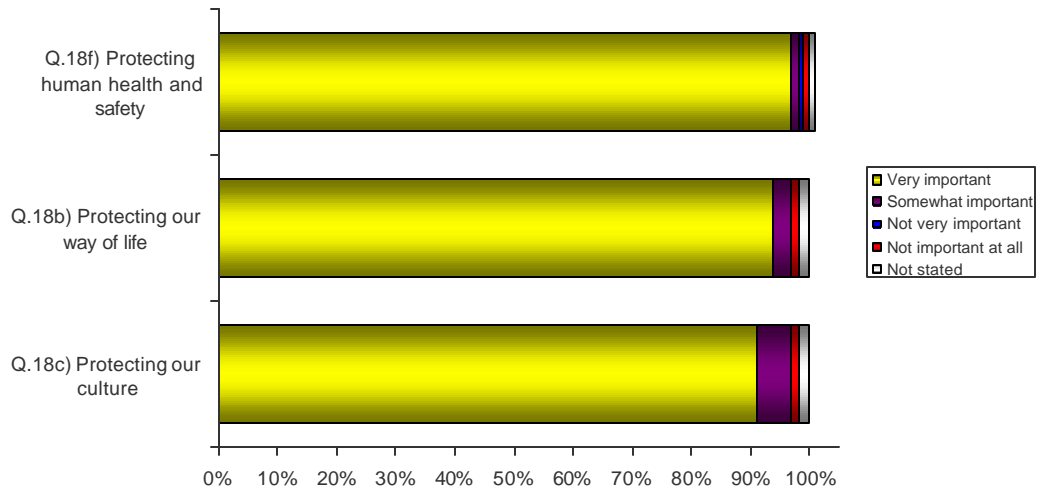
Q18 “The Future Development Team is thinking about a number of things regarding future hydro developments and would like to know what’s important to you. Please tell me how important the following things are to you? The first is: Would you say that “insert option” is very important, somewhat important, not very important, or not important at all?” (n=137)



- The percentage of survey respondents who regard potential effects on plants and animals as being “very important” is also exceedingly high.
- The percentage of respondents indicating an issue is “very important” are: “protecting big game and animals” (98%); “protecting fish” (96%); “protecting plants” (96%); and “protecting fur-bearing animals” (96%).

Importance of Human Factors

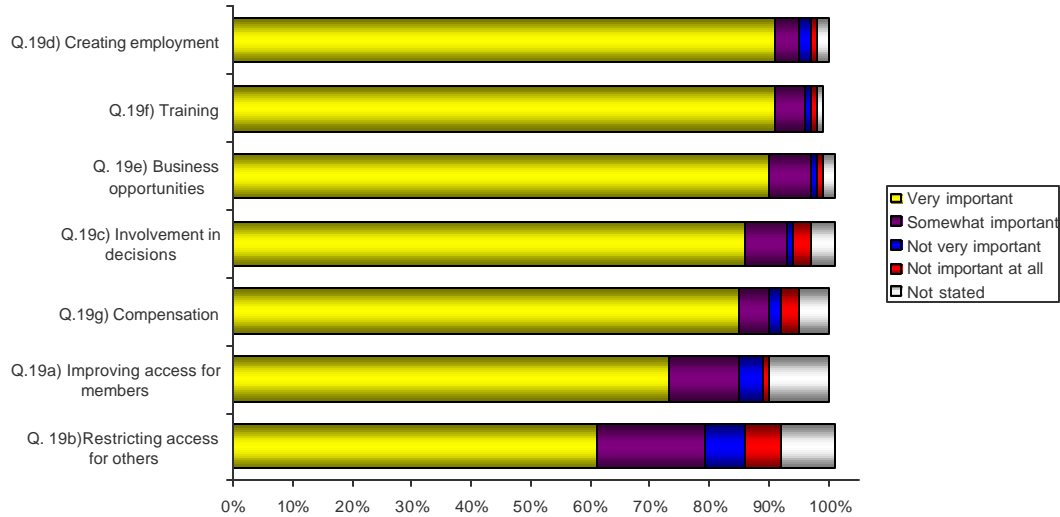
Q18 “The Future Development Team is thinking about a number of things regarding future hydro developments and would like to know what’s important to you. Please tell me how important the following things are to you? The first is: Would you say that “insert option” is very important, somewhat important, not very important, or not important at all?” (n=137)



- The percentage of survey respondents who regard potential effects on humans as “very important” is once again quite high.
- The percentage of respondents indicating an issue is “very important” are: “protecting human health and safety” (97%); “protecting our way of life” (94%) and “protecting our culture” (91%).

Importance of Personal Factors

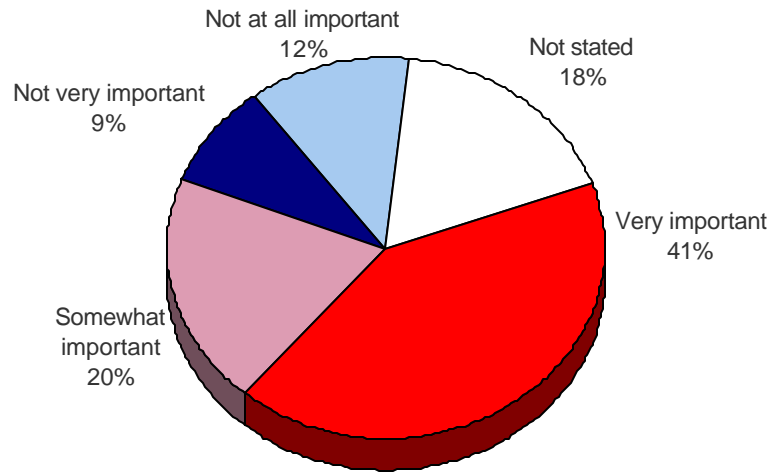
Q19 “Now I would like to ask you some questions about what is important to you, as an NCN member, with regards to the proposed projects. The first is: Would you say that “insert option” is very important, somewhat important, not very important or not at all important?” (n=137)



- The percentage of survey respondents who regard potential effects on personal factors is lower in comparison with other items tested. By any objective measure, however, the importance attached to these factors is still very high.
- The percentage of respondents indicating an issue is “very important” are: “creating employment” (91%); “training for NCN members” (91%); “business opportunities for NCN members” (90%); “involving NCN members in Hydro-related decisions” (86%); “compensation” (85%); “improving access for NCN members to resource areas” (73%); and “restricting access for others to resource areas” (61%).

Importance of NCN Ownership

Q19h "NCN owning part of the project or projects. Would you say this is very important, somewhat important, not very important or not important at all?" (n=137)

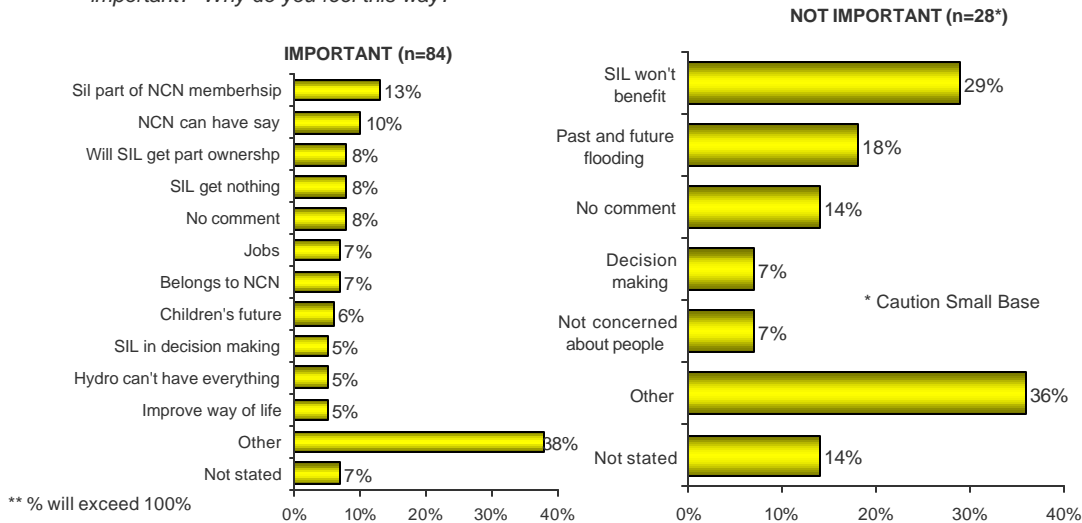


- NCN members living in South Indian Lake were asked about the importance of NCN owning part of the proposed hydro development projects. A solid majority (62%) of survey participants feel it is either “very important” (42%) or “somewhat important” (20%) that NCN retain some ownership.
- Those most likely to attach a high degree of importance to some level of project ownership were respondents aged 16-34 years (38%), men (46%) and those employed on a part time basis (64%).

Reasons For Project Ownership Importance

Total Mentions**

Q19h/i “Now I would like to ask you some questions about what is important to you, as an NCN member, with regards to the proposed projects. The first is: Would you say that “NCN owning part of the project or projects” is very important, somewhat important, not very important or not at all important? Why do you feel this way?”



Note: The results cited in the graph above represent the most common responses to Questions 19h/i. Readers are invited to refer to the detailed tabular results for a complete list of responses to these open-ended questions.

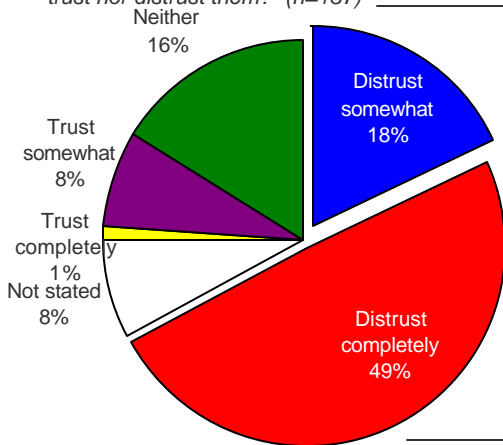
- When those in favour of some level of ownership were asked why they felt this type of involvement was important, no single reason was offered with any significant frequency. The most common justification supporting ownership was that NCN members living in South Indian Lake are still members of NCN (13%), and, presumably, would enjoy some of the benefits of ownership.
- Of the small number of respondents (28) who felt it was “not very important” or “not at all important” for NCN to have some level of ownership, the reason offered most frequently was that Nelson House will benefit while South Indian Lake will not (29%). This response stands in contrast to the reasoning of those who favour ownership.

TRUST OF MANITOBA HYDRO

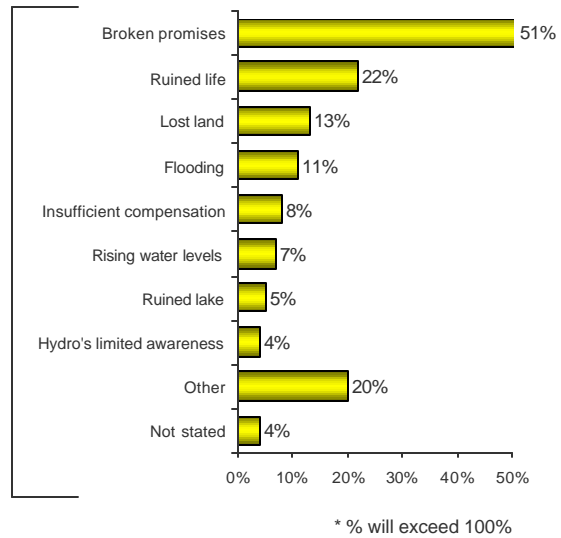
Trust of Manitoba Hydro

Total Mentions*

Q22a "Please tell me to what extent you trust Manitoba Hydro. Do you trust them completely, do you trust them somewhat, do you somewhat distrust them, do you distrust them completely or do you neither trust nor distrust them?" (n=137)



Q22b "Please tell us why you feel this way" (n=91)



Note: The results cited in the graph above represent the most common responses to Question 22b. Readers are invited to refer to the detailed tabular results for a complete list of responses to this open-ended question.

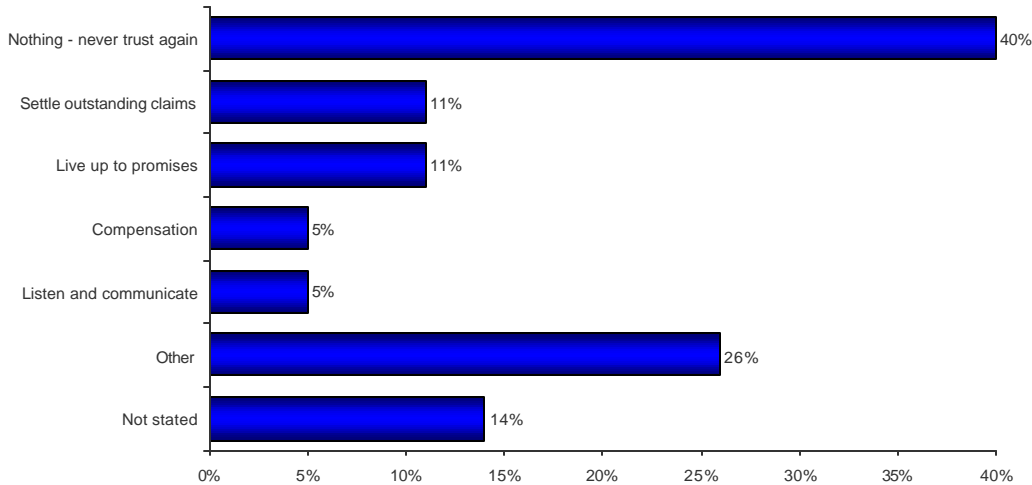
- Fully two-thirds (67%) of South Indian Lake respondents are distrustful of Manitoba Hydro, with nearly half (49%) completely distrusting the Provincial Crown Corporation.
- Distrust correlates strongly with respondent age. Younger respondents aged 16-34 (33% completely distrust) appear to be less doubtful of this organization than those aged 35-54 (48% completely distrust) or those aged 55 years and older (88% completely distrust among 55+ years). Women (56% completely distrust) were also more likely to be distrustful than were men (43% completely distrust).

- One-half (51%) of those expressing distrust of Manitoba Hydro point to past broken promises, such as promises of housing for South Indian Lake residents built by Manitoba Hydro, as the main reason for their distrust. A number of respondents also stated that Hydro has ruined the livelihoods of people (22%), while several others made statements in some way or another pertained to flooding (39% combined).
- Distrust based on perceived broken promises was highest among older respondents (64% among 55+ years).

Suggestions to Regain Trust in Manitoba Hydro

Total Mentions* (n=91)

Q22c “What would it take to regain that trust?”



* % will exceed 100%

Note: The results cited in the graph above represent the most common responses to Question 22c. Readers are invited to refer to the detailed tabular results for a complete list of responses to this open-ended question.

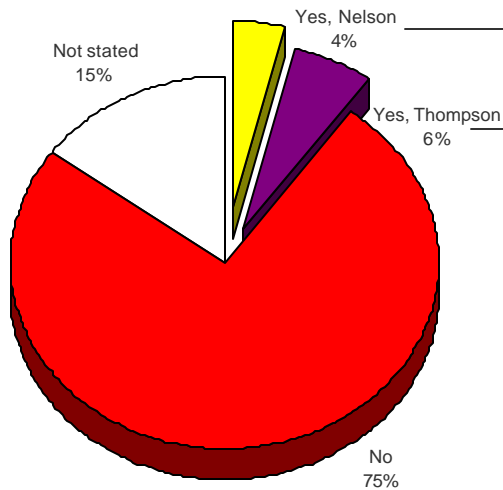
- When asked what it would take for Hydro to regain their trust, the single most common response was that trust cannot be regained (40%). Much smaller percentages of respondents felt that trust could be regained through the settlement of outstanding claims (11%) or by living up to promises (11%).
- Respondents aged 55 years and older (68%) were more likely to feel that trust has been permanently lost.

4.2 Migration

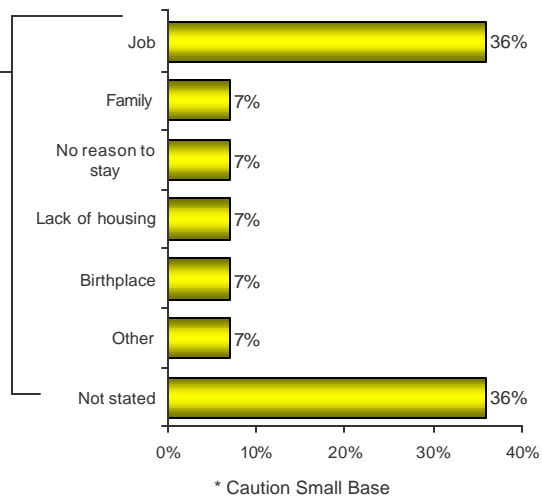
Respondents were asked whether they planned to move back to Nelson House or to Thompson if either of the proposed developments were to proceed. The results are outlined below.

Possibility of Relocation

Q23a “If either of the possible future hydro-electric developments goes ahead, are you planning to relocate to Nelson House or Thompson?” (n=137)



Q23b “If yes, please tell us why you and your family would move?” (n=14*)



Note: The results cited in the graph above represent the most common responses to Question 23b. Readers are invited to refer to the detailed tabular results for a complete list of responses to this open-ended question.

- Three-quarters (75%) of South Indian Lake respondents indicated that proceeding with either of the proposed developments will not cause them to move from their homes. However, six per cent said they would move to Thompson, while a further four per cent stated they would move to Nelson House. Fifteen per cent of respondents were uncertain as to whether they would relocate as the result of Hydro development.

- Respondents aged 16-54 years (15%) were more inclined to state that they would relocate to Thompson. Respondents aged 55 years and older (12%) were more likely to choose Nelson House as the new place of residence. Among those who intended to move, the single largest reason was to secure a job (36%).

4.3 Employment Opportunities

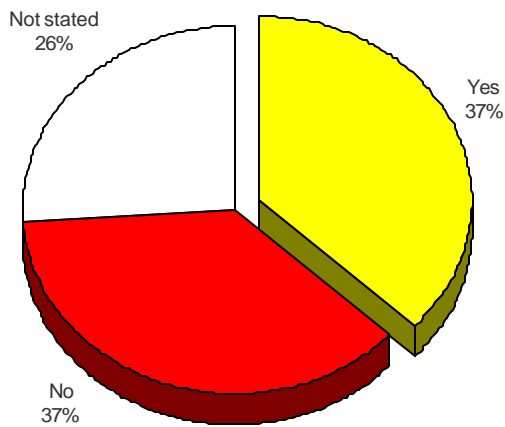
As part of the survey, respondents were asked whether they are interested in employment opportunities associated with the construction of the proposed developments, as well post-construction, operations jobs with Manitoba Hydro. In both cases they were asked what types of employment opportunities they would like to pursue and any barriers they saw to obtaining employment in these areas.

4.3.1 Construction Employment

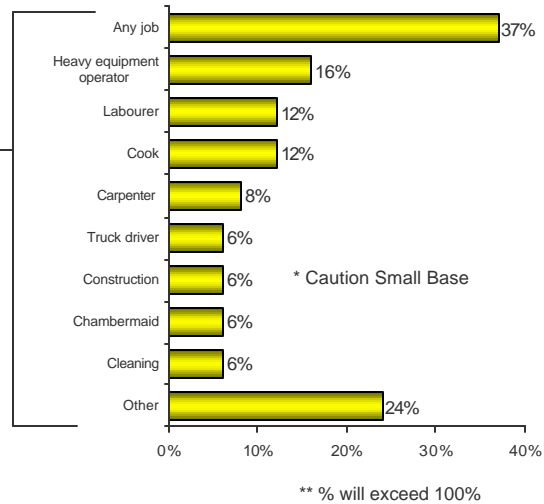
Construction Employment Opportunities

Total Mentions**

Q24a “Are you interested in pursuing employment opportunities during the construction phase of the possible new hydro developments?” (n=137)



Q24b “If yes, what kind of job would you like to obtain?” (n=51*)



Note: The results cited in the graph above represent the most common responses to Question 24b. Readers are invited to refer to the detailed tabular results for a complete list of responses to this open-ended question.

- Thirty-seven per cent of South Indian Lake respondents were interested in employment opportunities during the construction phase of the proposed new Hydro developments.

- Respondents looking for employment (53%) and those with part-time employment (52%), as well as younger respondents (48% for 16-34 years) and men (41%) were most inclined to be interested in construction phase employment.
- Among the comparatively small number of respondents interested in construction phase employment, thirty-seven per cent are interested in any type of position. Heavy equipment operator (16%), labourer (12%) and cook (12%) were mentioned with somewhat lower frequency.
- Women were more open to any type of construction phase employment (50% versus 30% for men). Moreover, all of those (8 respondents) who wish to operate heavy equipment were men, while all of those (6 respondents) who wished to secure cooking jobs were women.
- Some of the more commonly cited barriers to obtaining construction employment included “training” (22%), “family” (8%), “education” (4%), “another job” (4%) or “medical/health” reasons (4%).

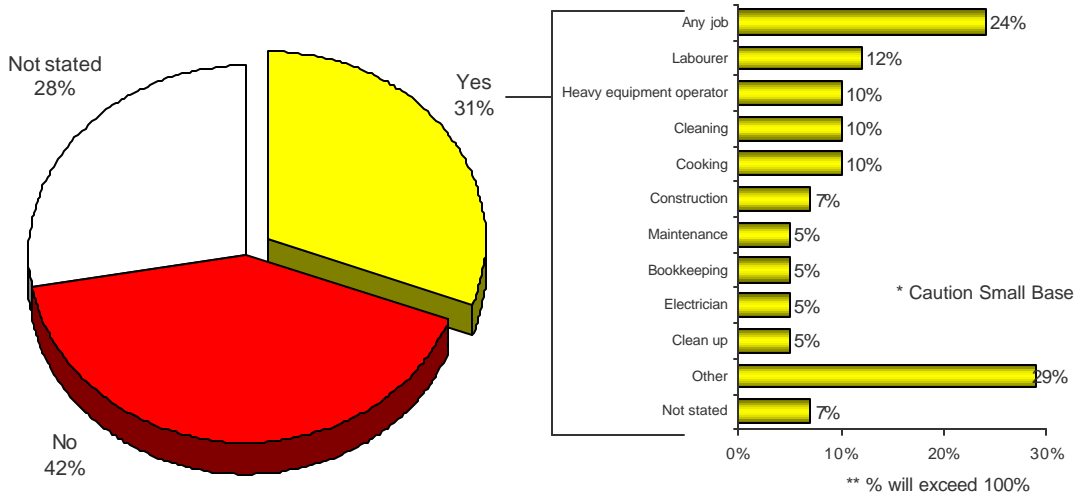
4.3.2 Post-Construction Employment

Post Construction Employment Opportunities

Total Mentions**

Q26a "Are you interested in pursuing employment with Manitoba Hydro once construction is over and the possible new hydro developments are operating?" (n=137)

Q26b "If yes, what kind of job would you like to obtain?" (n=42*)



Note: The results cited in the graph above represent the most common responses to Question 26b. Readers are invited to refer to the detailed tabular results for a complete list of responses to this open-ended question.

- Less than one-third (31%) of South Indian Lake respondents are interested in pursuing employment with Manitoba Hydro once the construction phase is completed and the new Hydro developments are operating.
- Those currently employed part-time (45%) are most interested in post-construction Hydro employment. Comparatively higher levels of interest exist among younger respondents (38% for 16-34 years, falling to 30% for 35-54 years) and men (36% versus 24% for women).

- In terms of the type of post construction phase employment desired, one-quarter of respondents (24%) were willing to take any job available. Labourer (12%), cooking (10%), heavy equipment operator (10%), and cleaning duties (10%) were mentioned less frequently.
- Those aged 16-34 years (36%) and women (31%) were most open to any position.
- The most commonly cited barrier to obtaining post-construction employment was training (21%). Medical/health reasons (5%) and family (5%) were cited less frequently by respondents.

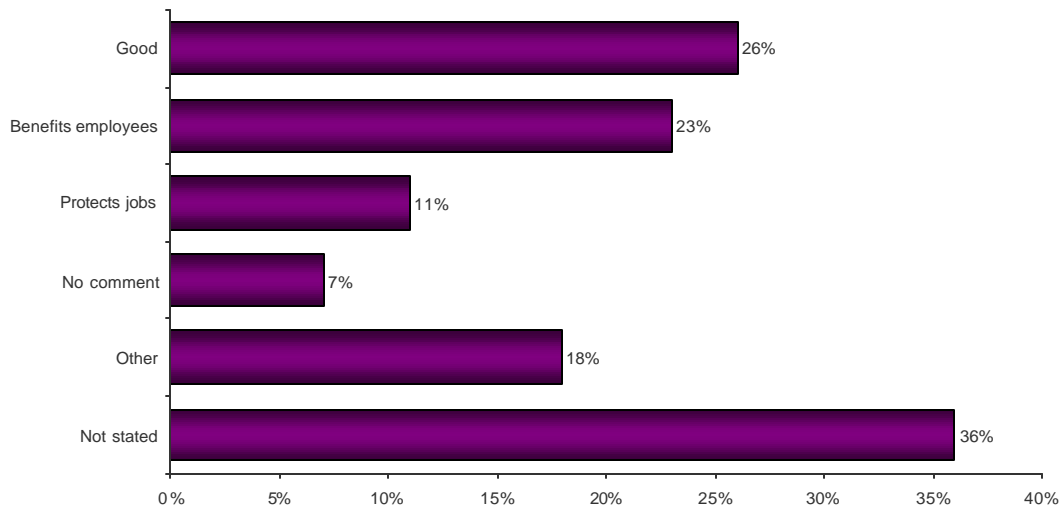
4.4 Knowledge of Unions

Manitoba Hydro has collective agreements with several unions and NCN members working on the Wuskwatim or Notigi projects may need to become part of these unions as a condition of employment. To determine their knowledge about unions, NCN members living in South Indian Lake were asked a series of questions about:

- What they think about being in a union
- Prior union membership and activity as a union member, and
- Knowledge of the Burntwood Nelson Collective Agreement.

Perceptions of Union Membership

Q28 “What do you think about being in a union and why?” (n=137)



Note: The results cited in the graph above represent the most common responses to Question 28. Readers are invited to refer to the detailed tabular results for a complete list of responses to this open-ended question.

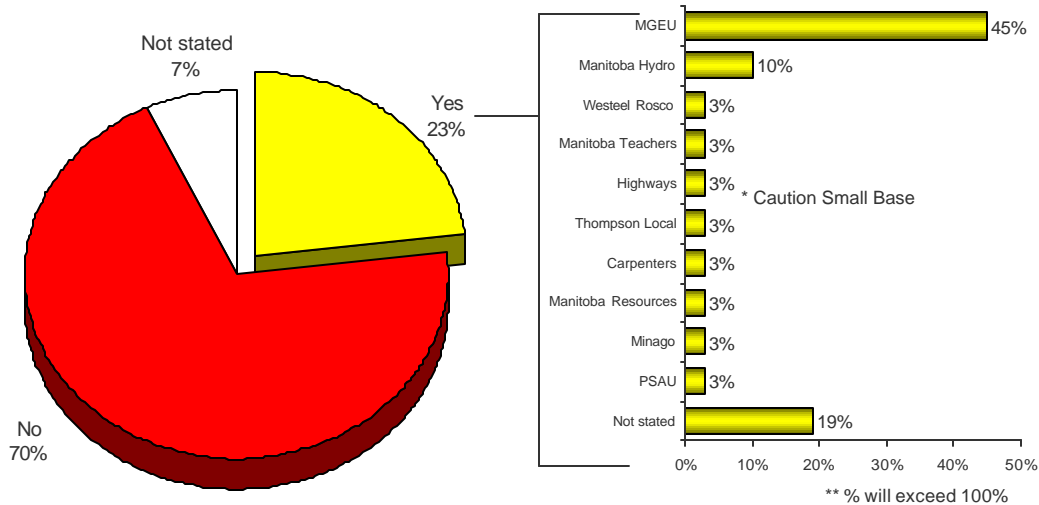
- When asked about their thoughts on unions, South Indian Lake respondents offered a series of generally positive comments. One-quarter (26%) say unions are good, while nearly as many (23%) note that organized labour benefits employees.
- Those most likely to be favourably disposed toward unions are those currently employed on a full-time basis, men and respondents aged 35-54 years.

Prior Union Membership

Total Mentions**

Q29 "Have you ever been a member of a labour union?" (n=137)

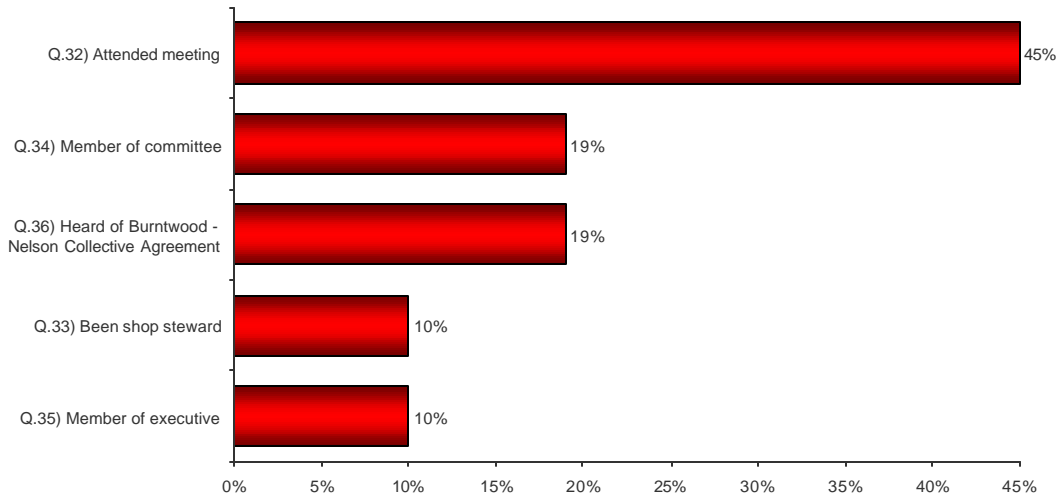
Q30 "Which union did/do you belong to?" (n=31*)



- Fewer than one-in-four (23%) South Indian Lake respondents have ever been a member of a labour union.
- Those most likely to have held union membership are those with current full-time employment (43%) and middle-aged respondents (41% for 35-54 years).
- Among this small sampling of respondents, the MGEU (45%) and Manitoba Hydro associated unions (10%) were the only unions to be mentioned by more than a single respondent.

Union Participation

Percentage indicating they had participated. (n=31*)



* Caution Small Base

- Among the small number of respondents (n=31) with a union background, just under half (45%) have attended a union meeting.
- One in five (19%) have been a member of a union committee. All of these respondents were men.
- Ten per cent of these respondents have served as a shop steward. All of these respondents were men.
- Ten per cent of these respondents have served on a union executive. Once again, all of these respondents were men.

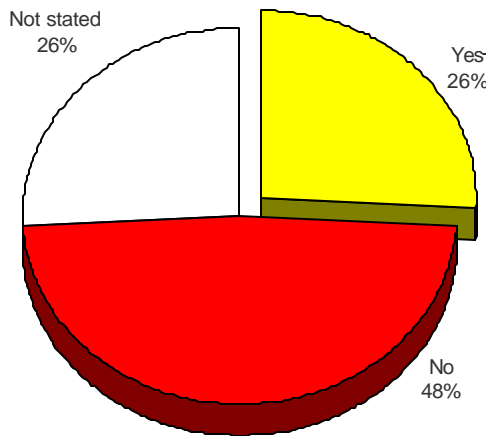
4.5 Interest in Business Opportunities

As with employment opportunities, respondents were asked to indicate whether they would be interested in pursuing business opportunities related to the projects and, if so, what types of opportunities they would like to pursue. They were also asked whether they could see any barriers to realizing their business goals, and whether they had any previous business or business training experience.

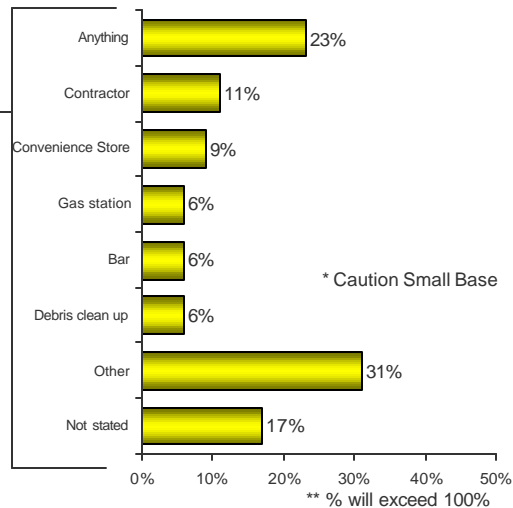
Interest in Business Opportunities

Total Mentions**

Q37a “Are you interested in pursuing contracts and business opportunities related to the possible new hydro developments?” (n=137)



Q37b “What kind of business opportunity do you see with the new hydro developments?” (n=35*)



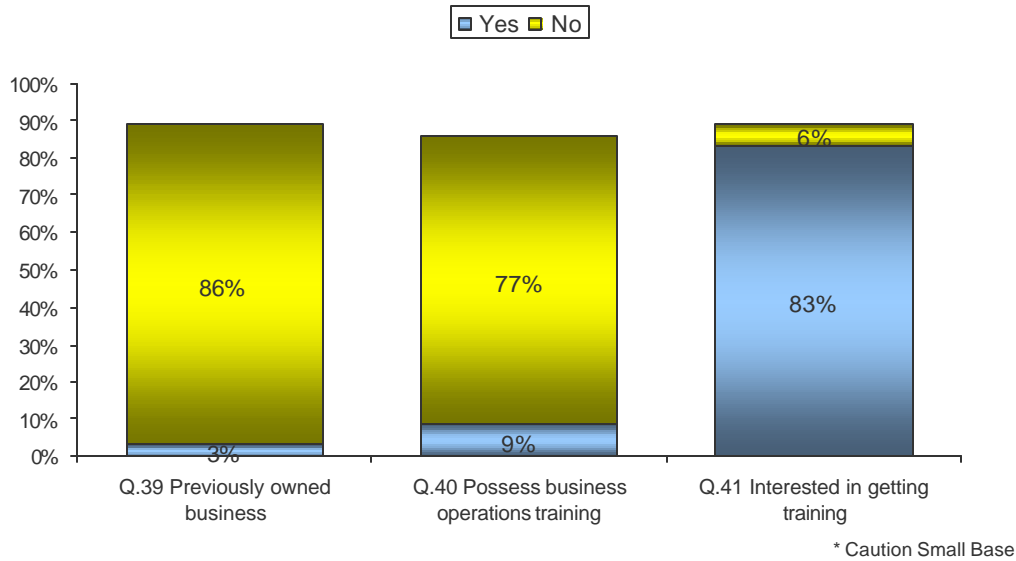
Note: The results cited in the graph above represent the most common responses to Question 37b. Readers are invited to refer to the detailed tabular results for a complete list of responses to this open-ended question.

- One-quarter (26%) of South Indian Lake respondents are interested in pursuing contracts and business opportunities related to the possible new Hydro developments.

- Those currently looking for employment (41%), as well as younger (33% for 16-34 years) and middle-aged (25% for 35-54 years) respondents were most likely to express interest in Hydro related business opportunities.
- In terms of business opportunities available, the most frequently offered response was “any type of project” (23%).
- Among the small number of respondents indicating they would be interested in business opportunities related to developments, some of the perceived barriers to pursuing business opportunities included financing (14%) and NCN (6%).

Knowledge of Business

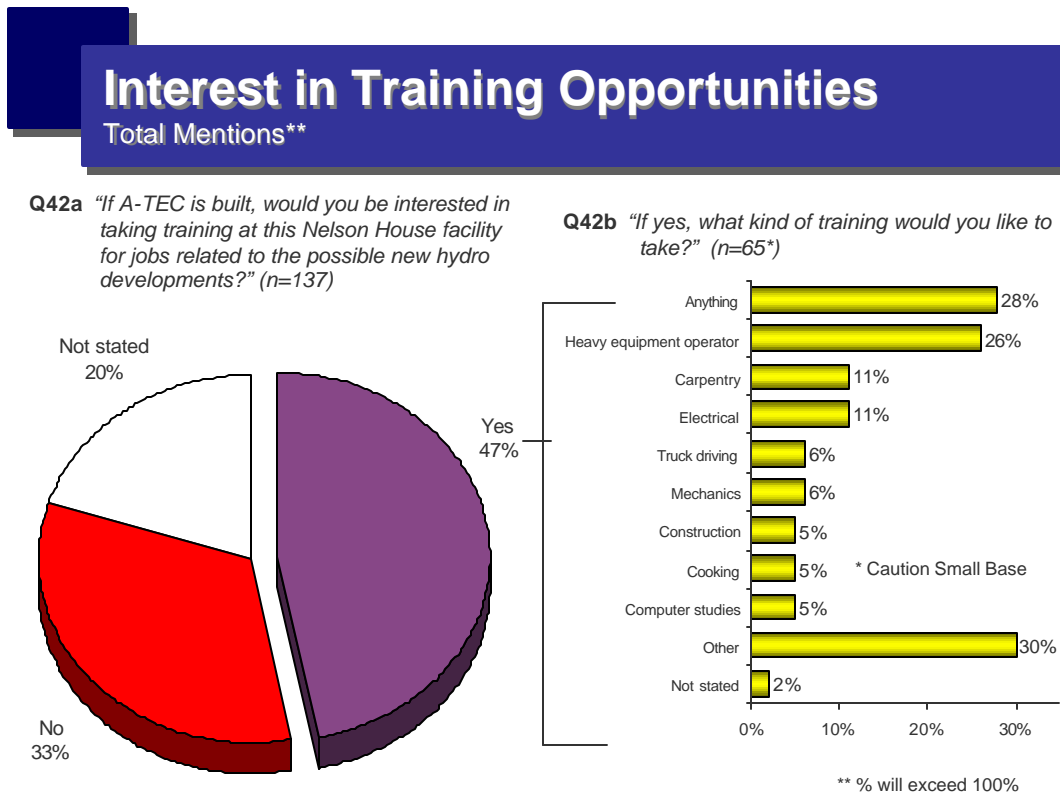
(n=35*)



- South Indian Lake respondents with a declared interest in pursuing contracts and business opportunities related to the proposed Hydro developments (n=35) were asked if they had previously owned or operated a business. Only one respondent had this type of business background.
- Three of 35 respondents indicated that they have training in operating a business.
- The vast majority (83%) of those interested in pursuing contracts and business opportunities related to new Hydro developments, however, are *interested* in receiving business training.

4.6 Interest in Training Opportunities

If the proposed Wuskwatim and/or Notigi development go ahead, NCN may establish a company called the Atoskiwin Training and Employment Centre (A-TEC) in Nelson House to carry out training and do job referrals for the projects. To help NCN plan for programming at this proposed facility, respondents were asked questions about their interest in training at this facility and their specific training interests.



Note: The results cited in the graph above represent the most common responses to Question 42b. Readers are invited to refer to the detailed tabular results for a complete list of responses to this open-ended question.

- Nearly half (47%) of respondents indicated that they would be interested taking training at the A-TEC facility for jobs related to the possible hydro developments.

- Those most likely to express interest in training opportunities were those currently looking for work (82%) and those currently in part-time employment situations. (61%). Younger respondents (61% for 16-34 years, falling to 45% for 35-54 years, compared with 20% for 55+ years) and men (55% versus 37% for women) were more receptive to the idea of Hydro-related training.
- Respondents interested in training opportunities were asked what type of training they would like to receive. Among this comparatively small number of respondents (65 respondents), nearly three-in-ten (28%) were open to any type of training. Nearly as many (26%) desired training in heavy equipment operation, while one-in-ten respondents expressed interest in electrical (11%) and carpentry (11%) training.
- Younger respondents (35%) and women (45%) were most open to any type of training opportunity.

4.7 Past Manitoba Hydro Training and Employment

Limestone Training and Employment Agency

Training (n=112)

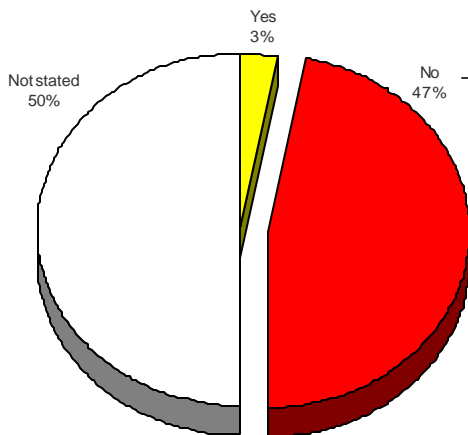
Q48a) "Did you receive training at the Limestone Training and Employment Agency?"



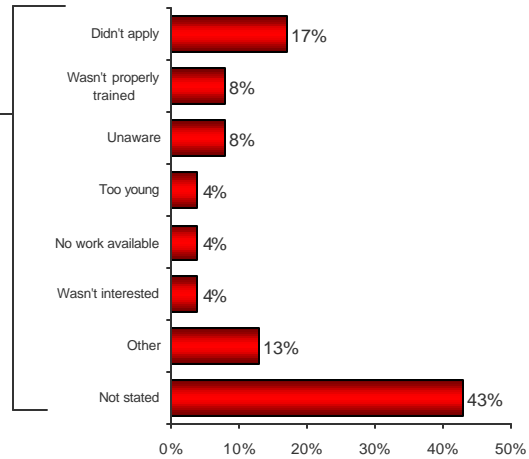
- Respondents aged 25 years and older were asked whether they had received training at the Limestone Training and Employment Agency. Six per cent of respondents indicated that they had trained with this organization.
- Those most likely to have training at the Limestone Training and Employment Agency were aged 35-54 years (14%) and men (9% versus 2% for women).

Employment on Limestone Construction

Q49a "Did you get a job working on the Limestone construction project?"
(n=112)



Q49b "If no, why not?"
(n=53*)



* Caution Small Base

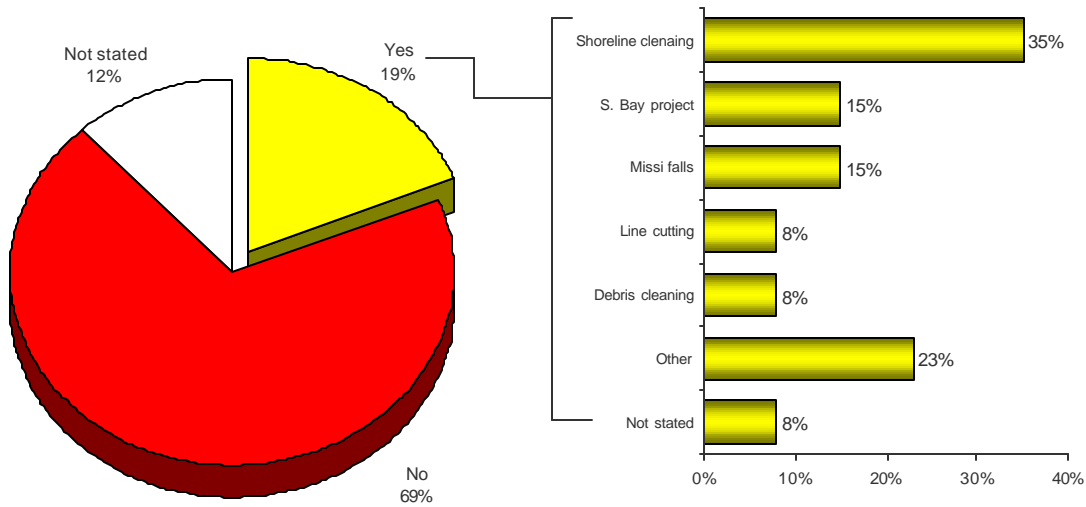
Note: The results cited in the graph above represent the most common responses to Question 49b. Readers are invited to refer to the detailed tabular results for a complete list of responses to this open-ended question.

- Among respondents aged 25 years and older, only three per cent indicated that they worked on the Limestone construction project. All of these respondents were men over the age of 35 years.
- Respondents who reported that they had not worked on the Limestone project were subsequently asked as to the reasons for not working on this project. The single greatest number (43%) were unwilling or unable to answer the question, while seventeen per cent stated that they did not apply.

Other Hydro Employment Experience

Q50a "Have you worked on the construction of any other hydro projects?" (n=137)

Q50b "If yes, which projects?" (n=26*)



* Caution Small Base

Note: The results cited in the graph above represent the most common responses to Question 50b. Readers are invited to refer to the detailed tabular results for a complete list of responses to this open-ended question.

- Nineteen per cent of all South Indian Lake respondents claimed to have worked on Hydro projects at some time.
- Those most likely to have other Hydro experience are aged 35-54 years (30%), men (31% versus 2% for women) and currently employed on a part-time basis (41%).
- Among the small sampling of those who reported personal work experience on hydro projects, many said they were involved in shoreline cleaning.

4.8 Traditional Activities / Resource Use

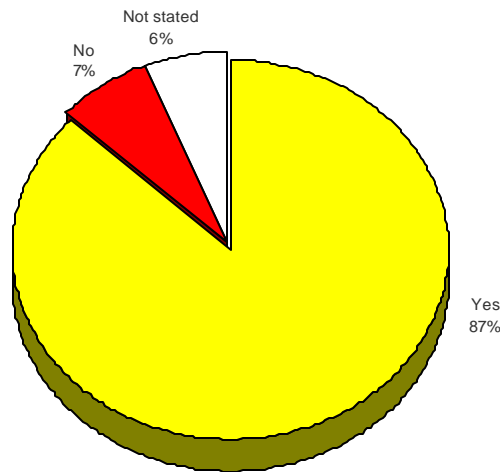
The survey asked respondents a number of questions about their use of the South Indian Lake Trapline Zone and the NCN Resource Management Area. These questions related to:

- Travel on waterways within these areas
- Resource and traditional activities undertaken in these areas, including hunting, fishing, berry picking and visiting important sites.

TRAVEL ON LOCAL WATERWAYS

Travel on Local Waterways

Q51 "Have you travelled on lakes and rivers in the South Indian Lake Trapline Zone or the NCN Resource Management Area in any season within the last year, for example, for hunting, fishing, trapping or other uses?" (n=137)

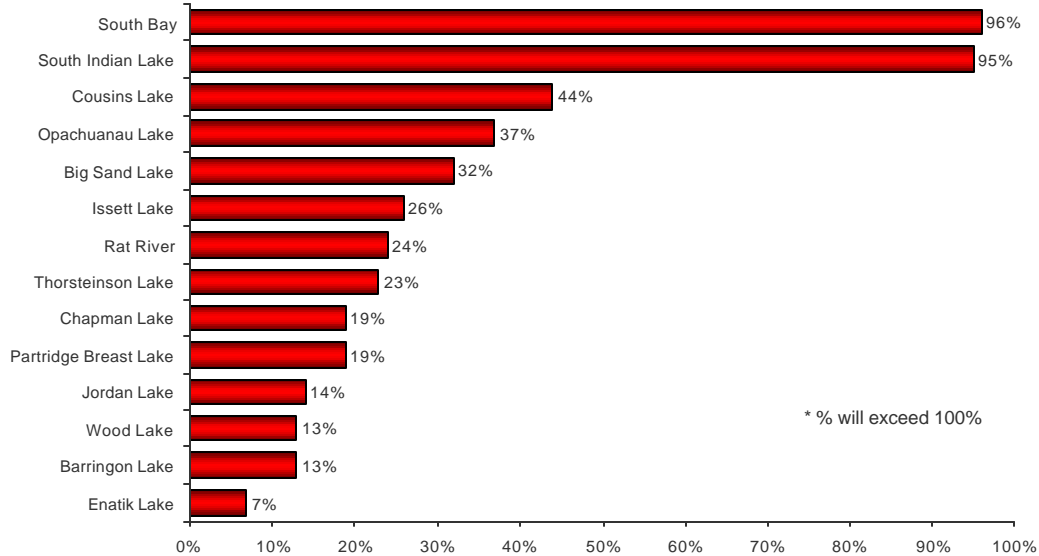


- A vast majority (87%) of NCN members living in South Indian Lake have travelled in the South Indian Lake Trapline Zone or the NCN Resource Management Area within the last year.
- Travel in these regions is especially high among middle-aged respondents (98% for 35-54 years) and men (90% vs 81% among women).

Areas Travelled in South Indian Lake Trapline Zone

Total Mentions* (n=119)

Q52 "Where have you travelled on these waterways within the last year?"

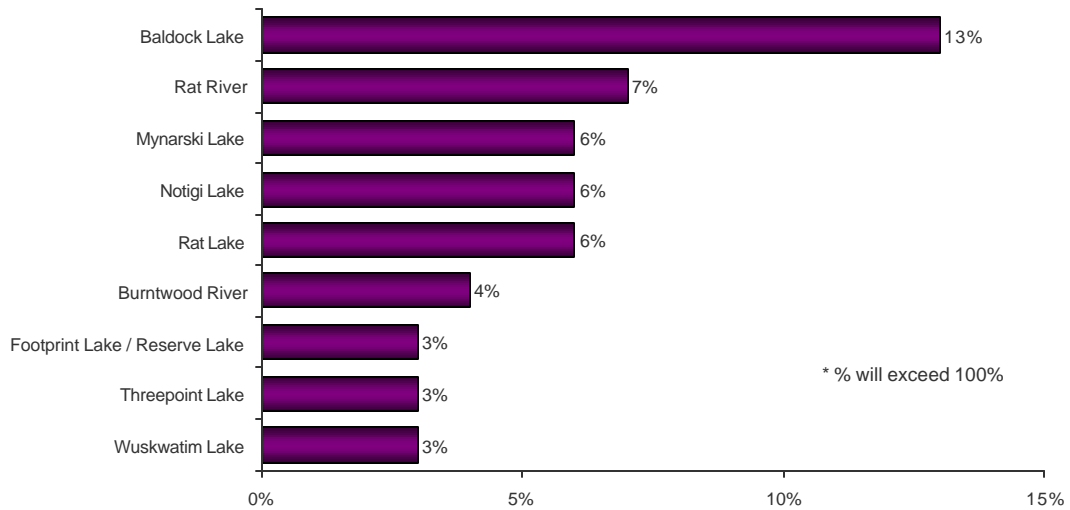


Note: The results cited in the graph above represent the most common responses to Question 52. Readers are invited to refer to the detailed tabular results for a complete list of responses to this open-ended question.

- The number of destinations and areas visited by those who have travelled in the South Indian Lake Trapline Zone within the last year is extensive, generating several dozen distinct mentions.
- Two areas that have been travelled by virtually all respondents are South Bay (96%) and Southern Indian Lake (95%).

Areas Travelled in NCN Resource Management Area Total Mentions* (n=119)

Q52 “Where have you travelled on these waterways within the last year?”



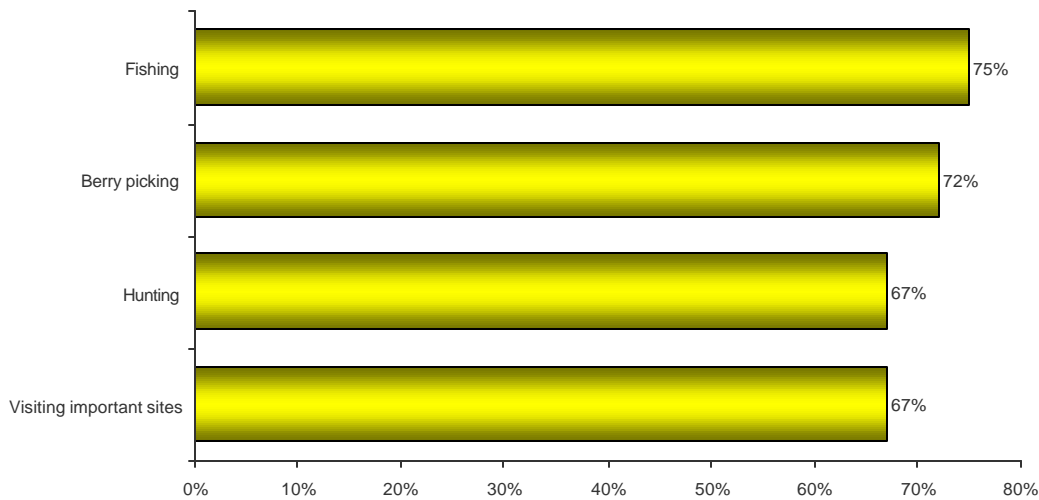
Note: The results cited in the graph above represent the most common responses to Question 52. Readers are invited to refer to the detailed tabular results for a complete list of responses to this open-ended question.

- Somewhat less travelled than the South Indian Lake Trapline Zone is the NCN Resource Management Area. In this region, Baldock Lake was the most frequently used area (13%), well ahead of any other NCN Resource Management Area location.
- Men (19%) were more likely than women (2%) to have visited Baldock Lake.

RESOURCE AND TRADITIONAL ACTIVITIES

Resource and Traditional Activities Within the Identified Areas
 - Percent of Respondents Indicating Participating in these Activities -

Q53 "In any season within the last year, did you do any of the following activities within the NCN Resource Management Area or the South Indian Lake Trapline Zone?" (n=137)



- Seventy- four per cent of those who travelled to the South Indian Lake Trapline Zone or the NCN Resource Management Area in the past year fished while in the region. Those most likely to fish were aged 35-54 years (82%), men (81%) and respondents with part-time work (91%).
- Seventy-two per cent of visitors to these regions picked berries. Those most likely to pick berries were those aged 35-54 years (82%).
- Sixty-seven per cent of those travelling to these regions hunted while there. Those most likely to hunt were aged 35-54 years (73%), men (80%) and those with part-time work (91%).

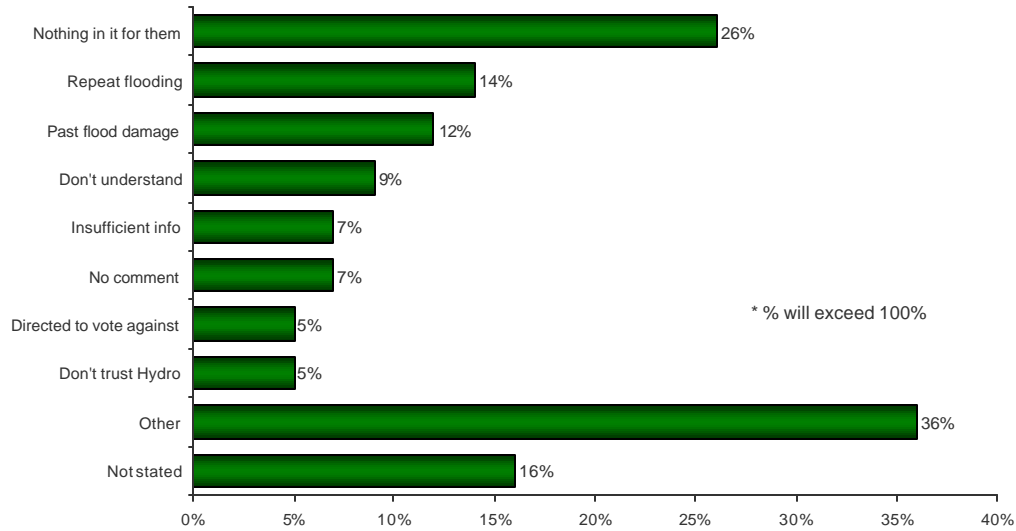
- Sixty-seven per cent of those travelling to these regions visited important sites. Those most likely to visit important sites were aged 35-54 years (77%), men (74%) and those with part-time work (80%).

4.9 Other Issues and Concerns

The NCN Future Development Team was interested in trying to understand why NCN members living in South Indian Lake voted so strongly against the Agreement-in-Principle during the May 2001 vote. For this reason, respondents were asked a series of questions to gain insight on why they thought the majority of members living in South Indian Lake voted this way and whether the concerns of these members relate only to future development.

Possible Reasons for the Outcome of the AIP Vote in SIL Total Mentions*

Q54 “Why do you think the majority of NCN members living at South Indian Lake voted this way?” (n=137)



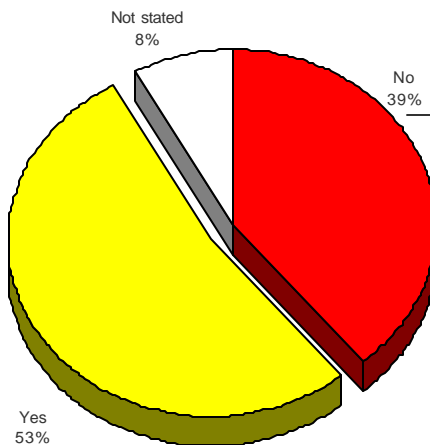
Note: The results cited in the graph above represent the most common responses to Question 54. Readers are invited to refer to the detailed tabular results for a complete list of responses to this open-ended question.

- When asked why local members voted so strongly against the AIP, twenty-six per cent of respondents stated that NCN members living in South Indian Lake feel there is nothing in it for them in these projects. Fourteen per cent pointed to potential problems with new flooding, while a further twelve per cent remarked that too much damage had occurred in past flooding.
- Those most likely to state that there is nothing for NCN members living in South Indian Lake to gain by the projects were middle aged respondents (36% among those aged 35-54 years).

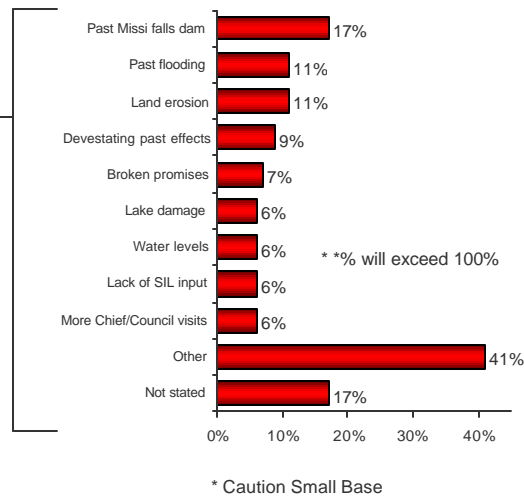
Concerns of NCN Members Living in South Indian Lake

Total Mentions**

Q56a “Do these concerns relate only to future developments?” (n=137)



Q56b “If no, what other concerns do NCN members living at South Indian Lake have?” (n=54*)



Note: The results cited in the graph above represent the most common responses to Question 56b. Readers are invited to refer to the detailed tabular results for a complete list of responses to this open-ended question.

- Fifty-three per cent of respondents noted that they felt that the concerns expressed over the Notigi and Wuskwatim projects related only to future development.
- Younger respondents (61% aged 16-34 years) were more inclined to associate concerns with future developments.
- The thirty-nine per cent of respondents who stated that the no vote on the Notigi and Wuskwatim projects did not pertain exclusively to future developments were asked what other concerns they perceived NCN members living in South Indian Lake as having. The comparatively small number of respondents qualified to answer this question primarily listed impacts associated with past hydro projects, including: dams built at Missi Falls (17%); past flooding (11%), land erosion

(11%), devastating past effects (9%), broken promises (7%), lake damage (6%) and water levels (6%).

2001 NCN OPINION SURVEY RESULTS
- Members Residing in
Thompson and Winnipeg -

Submitted to: NCN Future Development Team

February 2002

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1.0 BACKGROUND

In May of 2001, Nisichawayasihk Cree Nation (NCN) members had the opportunity to vote on an Agreement-In-Principle between NCN and Manitoba Hydro about possible new hydro-electric developments at Taskinigup Falls at Wuskwatim Lake and/or close to the Notigi control structure. To follow up on the results of this vote and to get a better understanding of how NCN members living outside of Nelson House see the benefits and drawbacks of these proposals, the NCN Future Development Team undertook a survey of members living in South Indian Lake, Thompson and Winnipeg. A similar survey was undertaken in May, June and July 2000 of members living on-reserve at Nelson House.

This report outlines the results of the survey of NCN members living in Thompson and Winnipeg. Thompson members were surveyed between July 30th and August 19th, 2001, while those in Winnipeg were interviewed between September 4th and 28th, 2001. In total, 175 NCN members were interviewed:

- 124 members in Thompson, representing nearly half of the NCN members aged 16 years or over living in Thompson, and
- 51 members in Winnipeg, representing about 40 per cent of the NCN members aged 16 years or over living in Winnipeg.

Section 2 of this report presents the survey methodology. The survey was conducted in two stages - a random sample, followed by a survey of all remaining members living in Thompson and Winnipeg. This approach is the same as the one that was used during the 2000 NCN Opinion Survey in Nelson House and the 2001 NCN Opinion Survey in South Indian Lake. Section 3 provides a profile of the residents who responded to the survey. Survey results, which are presented in graphic form and discussed in Section 4, make up the largest part of this report.

With the total sample of 175 NCN members (124 members in Thompson and 51 members in Winnipeg), one can be 95 per cent certain of an accuracy rate of ± 5.54 (using a finite population calculation) 19 times out of 20.

For more information on this research project, please contact:

InterGroup Consultants Ltd. at

(204) 942-0654.

2.0 SURVEY METHODOLOGY

2.1 Survey Instrument

The survey was designed to elicit the views of NCN members living in Thompson and Winnipeg about the following topics:

- What they have heard about the proposed hydro developments, how they heard about these developments and how communication about the developments could be improved;
- Concerns and benefits related to the proposed hydro developments;
- Reasons for possible migration to Nelson House, Thompson or South Indian Lake if either of the proposed projects were to proceed;
- Interest in employment, training and business opportunities related to the proposed developments;
- Trust of Manitoba Hydro;
- Knowledge and experience with unions;
- Manitoba Hydro Training and Employment;
- Education and Training;
- Use of the NCN Resource Management Area and the South Indian Lake Registered Trapline Zone; and,
- Other issues and concerns.

The survey instrument was detailed. It included 49 questions, some of which had multiple parts, and the majority of which were open-ended. For example, Question 12 asked respondents: “What concerns would you have if either the Wuskwatim or Notigi developments were to be built?”, with the opportunity to ask “If yes, what are they?”.

The full survey can be seen in an [Appendix 1](#) at the end of this report.

2.2 Survey Approach

All of the surveys were carried out in person. In Thompson, the surveys were conducted by Community Consultants from the NCN Future Development Office in Nelson House. In Winnipeg, three local NCN members were hired to undertake the surveys. In both communities, the surveys were conducted in about three weeks. In all cases, those doing the surveying asked the questions to respondents and recorded their answers. Staff from InterGroup Consultants Ltd. in Winnipeg provided organizational and advisory support via telephone, a community visit to Thompson, and in-person meetings with Winnipeg surveyors.

A two-staged data collection process was used. The first pass was intended to provide a valid sample, in the event that a complete census of NCN members aged 16 and over in Thompson and Winnipeg could not be completed in the short time available. The second pass sought to interview as many remaining eligible residents as the available time would permit.

FIRST PASS SURVEYS:

In the first pass, one person was selected at random from the NCN members living in each household in Thompson and Winnipeg and a survey was done with that person. The person to be interviewed was selected in advance based on who had the most recent birthday in that household. All elders were also included in the first pass. In total, 103 of the approximately 187 NCN members in Thompson included in the first pass were surveyed, and 47 of the 73 NCN members in Winnipeg included in the first pass were surveyed. Of the members on the first pass list, four Thompson members refused to be surveyed and one Winnipeg member refused to be surveyed.

SECOND PASS:

After the first pass was completed, interviewers started over from the beginning, returning to households to complete as many surveys as possible with the remaining

eligible respondents (those aged 16 or older) in each household. In total, an additional 21 surveys were completed in Thompson and an additional four surveys were completed in Winnipeg. This provided a total response of 175 surveys, or about 44 per cent of eligible NCN members living in these two communities. Of these,

- 124 members were interviewed in Thompson, representing nearly half of the NCN members aged 16 years or over living in Thompson, and
- 51 members were interviewed in Winnipeg, representing about 40 per cent of the NCN members aged 16 years or over living in Winnipeg.

All of the completed surveys were coded to facilitate analysis of the results. Community Consultants in Nelson House and InterGroup Consultants Ltd. worked together to develop detailed coding lists for the open-ended questions in the survey. Coding of all the open-ended questions in the completed surveys was done by InterGroup Consultants Ltd. Multiple choice questions were coded by Dimark Research Inc. Dimark also inputted all of the results and developed frequency analyses for the responses to each question by the age, sex, education, family status and income of those interviewed.

2.3 Survey Confidentiality

Confidentiality was very important to NCN. In order to keep track of those who were interviewed, survey respondents were asked their names and treaty numbers. This information, however, was gathered strictly as a tracking measure. No names or treaty numbers were ever used in the data analysis portion of the survey process. All of the surveys were identified by randomly assigned numbers once coding was completed.

After coding and data entry were finished, the surveys were placed in sealed boxes. They will be kept at the Winnipeg office of NCN's lawyer for one full year. Following this year, all of the surveys will be destroyed.

3.0 PROFILE OF RESPONDENTS

The following table presents a profile of survey respondents in Winnipeg and Thompson. Insufficient data are available on the populations of NCN members in these communities to compare the profile below to the actual population.

	2001 NCN Opinion Survey – Thompson and Winnipeg		
	TOTAL (175) (%)	MEN (72) (%)	WOMEN (103) (%)
AGE			
16-19	5	6	5
20-24	16	24	11
25-29	25	26	23
30-34	21	18	22
35-39	10	6	14
40-44	9	8	9
45-49	5	6	4
50-54	3	3	4
55-59	2	4	1
60-64	2	0	4
65-69	0	0	0
70+	1	0	2
FAMILY STATUS:			
Single	57	47	63
Divorced	2	1	3
Married	9	7	11
Common law	31	44	21
Widowed	1	0	2
HOUSEHOLD INCOME:			
<\$10K	34	31	36
\$10-19K	37	39	35
\$20-29K	10	13	9
\$30-39K	7	7	7
>\$40K	11	10	12
EMPLOYMENT STATUS:			
Full-time	17	25	12
Part-time/Seasonal	13	19	8
Unemployed/Actively looking	24	29	20
Unemployed/Not looking	27	13	38
Student	15	14	17
Not stated	3	0	6

(cont'd)

	2001 NCN Opinion Survey – Thompson and Winnipeg		
	TOTAL	MEN	WOMEN
	(175) (%)	(72) (%)	(103) (%)
EDUCATION:			
Less than Grade 9	12	13	12
Grades 9 to 11	55	52	57
Completed Grade 12	30	33	28
Not stated	3	3	4
LEVELS OF POST-SECONDARY EDUCATION OR TRAINING (enrolled or completed)			
Apprenticeship/Journeyman	9	17	3
Community college	26	32	22
University	13	13	13
Other	26	28	24

4.0 DISCUSSION HIGHLIGHTS / RESEARCH RESULTS

This section of the report highlights the main findings of the survey. For those who wish to examine the results for any question in more detail, a copy of the complete questionnaire is attached as [Appendix 1](#) and the results for each question are included in separate bound appendix documents to this report.

The analysis of survey results concentrates mainly on cross-tabulations of the total results of both Thompson and Winnipeg, for each question, by age and sex of respondent. Additional cross-tabulations of the results by additional demographic characteristics (e.g., education, employment status) have also been prepared for the survey. Each result is based on the total number of people who answered the particular question (referred to in the document as *n*), rather than the total 175 persons interviewed.

For convenience, the results are presented in the order they appeared in the questionnaire, summarized under the following headings:

- Possible Future Hydro Development
- Migration
- Employment Opportunities
- Unions
- Business Opportunities
- Training Opportunities
- Past Manitoba Hydro Training and Employment
- Traditional Activities / Resource Use
- Other Issues and Concerns

4.1 Possible Future Hydro Development

4.1.1 Awareness and Communication of Future Development

In order to determine what NCN members living in Thompson and Winnipeg have heard about the proposed Wuskwatim and Notigi projects, as well as the effectiveness of current communication about the proposed future developments, respondents were asked:

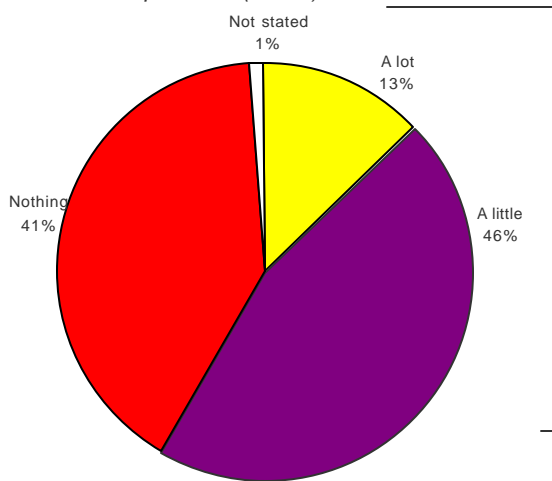
- What they have heard about future development,
- How they learned about these developments,
- If they felt they were receiving enough information, and
- Their suggested improvements to current communication about future development.

The following charts and text outline the main results from this section of the survey.

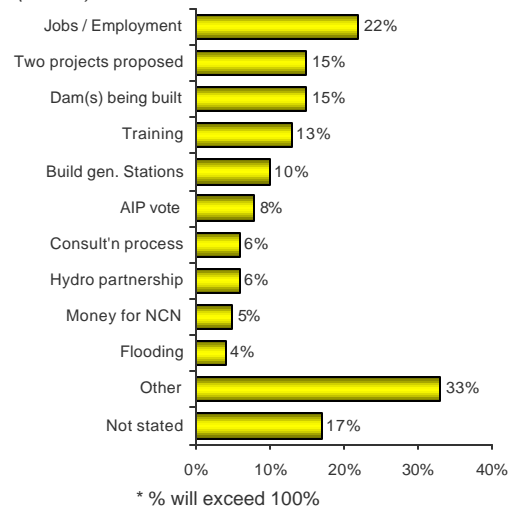
AWARENESS OF PROPOSED HYDRO DEVELOPMENTS

Awareness of Proposed Hydro Developments Total Mentions*

Q6 "What have you heard about the proposed hydro developments at Taskinigung or Notigi? Would you say that you have heard a lot, a little, or nothing at all about these developments?" (n=175)



Q7 "Please tell us what you've heard about these proposed hydro developments." (n=103)



Note: The results cited in the graph above represent the most common responses to Question 7. Readers are invited to refer to the detailed tabular results for a complete list of responses to this open-ended question.

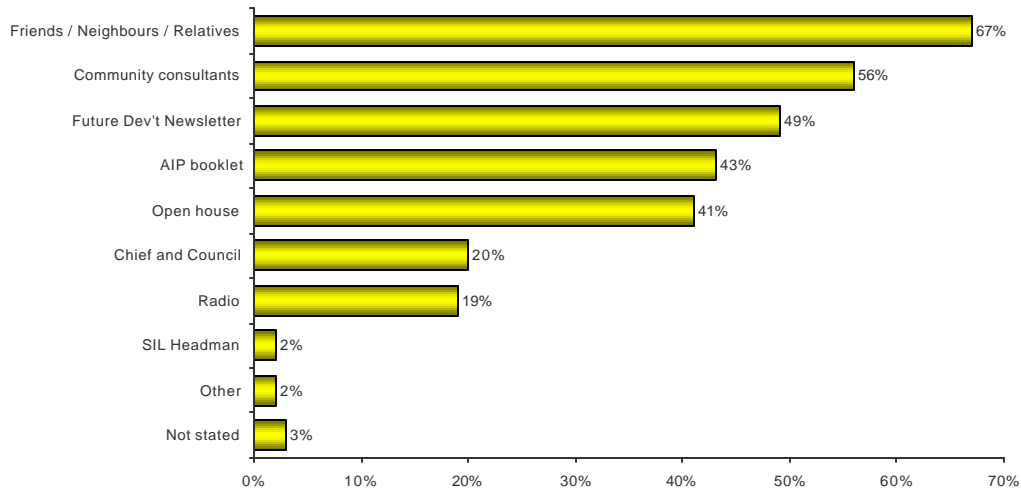
- Almost six-in-ten (59%) survey participants had heard something about the proposed Manitoba Hydro developments at Notigi and Taskinigung Falls. Few respondents (13%) claimed to have acquired a lot of information about these projects.
- It appears that respondents in Thompson (67%) were much more likely than their Winnipeg counterparts (39%) to be aware of these future projects. Men (73%) and middle-aged respondents (64% among 35-54 years) were also more likely to have heard something about these developments.

- Those who had heard something about the Notigi and Wuskwatim projects were asked what specific information they had learned. Responses varied from employment opportunities and training to actual project information. Twenty-two per cent of respondents stated that the projects involved employment, while fifteen per cent had heard that dams were being built and that there were two proposed projects. Some respondents (13%) had heard there was training involved and a further ten per cent had heard that generating stations were going to be built.
- Regarding what they had heard, employment was most likely to be mentioned by men (26% versus 18% among women), as was training (21% versus 4% among women).

Sources of Information About Future Development

Total Mentions* (n=103)

Q8 "How did you learn about these developments?"



* % will exceed 100%

- Word-of-mouth communication between friends, neighbours and relatives (67%) and information gathered through Community Consultants (56%) were the two most common avenues of information for those who had heard something about the proposed Notigi and Wuskwatim projects. Other sources of information identified with some frequency included: the Future Development Newsletter (49%), the AIP booklet (43%) and Open Houses (41%). Chief and Council (20%) and radio programs (19%) were also mentioned as sources of information about these developments.
- Men were more likely to have gathered their information through word-of-mouth channels than were women (77% versus 56%). Community Consultants were pointed to most often as the main source of information by residents in Thompson (67% versus 10% from Winnipeg respondents) and those who were under the age of 55. Men and residents of Thompson were more likely to report multiple sources of information about these proposed developments.

Satisfaction with Amount of Information

(n=103)

Q.9 “Do you feel that you are getting enough information about future development?”

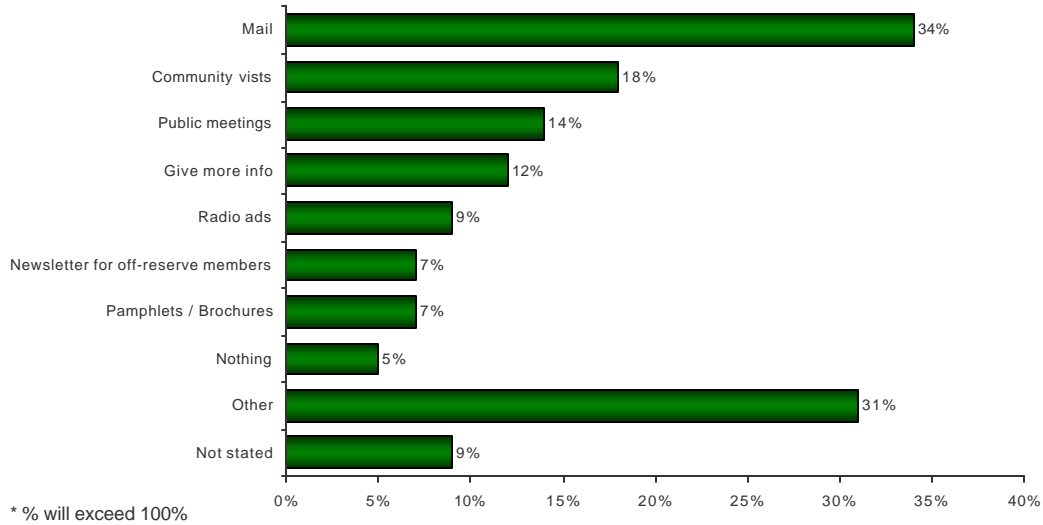


- Over one-half of respondents (57%) said they are *not* getting enough information about future hydro developments.
- Winnipeg residents (70% versus 54% among Thompson residents), middle-aged respondents (67%), and women (68% versus 47% men) were more likely to feel that they do not receive enough information regarding future hydro development activities.

IMPROVING COMMUNICATION ABOUT FUTURE DEVELOPMENT

Suggestions for Improvements to Communications Total Mentions *

Q10 "How could we improve communication with you about future development?" (n=175)



Note: Results cited in the graph above represent the most common responses to Question 10. Readers are invited to refer to the detailed tabular results for a complete list of responses to this open-ended question.

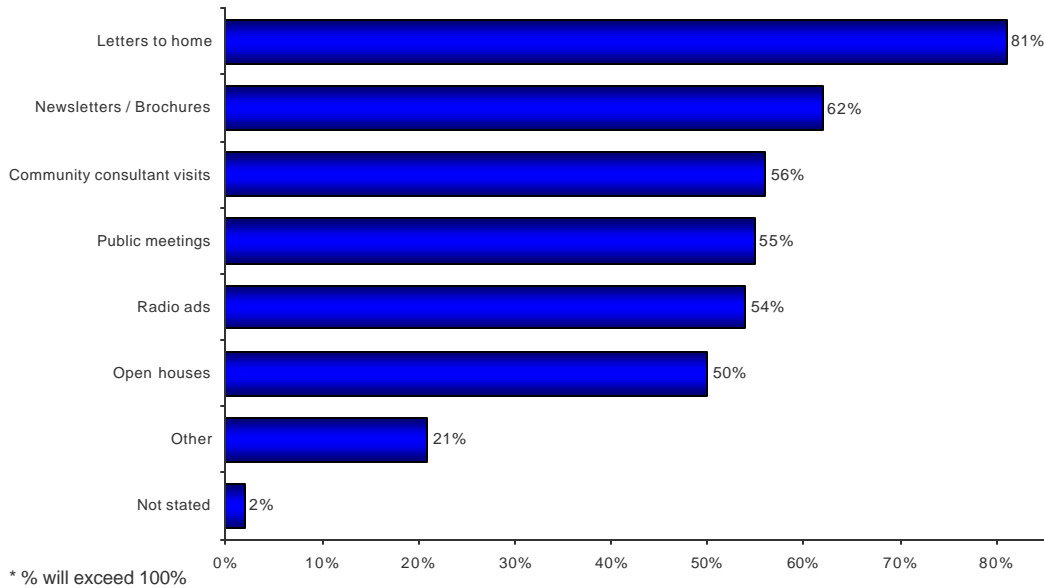
- When asked for advice on how to improve communication about future hydro developments more than two dozen responses were given. One-third (34%) of respondents suggested that information be mailed to their homes. “Community visits” were favoured by eighteen per cent of respondents and “public meetings” were expressed by fourteen per cent. Other suggestions included “radio ads” (9%), “newsletters for off-reserve members” (7%) and “pamphlets/brochures” (7%).

- Younger respondents (39% of those ages 16 to 34 years) and those living in Winnipeg (57% versus 25% among Thompson residents) were more inclined to suggest using the mail as an improvement to the current communication process for future development.

Preferred Ways to Distribute Information

Total Mentions*

Q11 "What are the best ways for us to distribute information about future developments?" (n=175)



Note: Results cited in the above graph represent the most common responses to Question 11. Readers are invited to refer to the detailed tabular results for a complete list of responses to this open-ended question.

- When asked what the best ways are for the Future Development Team to distribute information, survey participants indicated that sending mail to their homes (81%) and producing and distributing “newsletters” (62%) would be effective. Other suggested forms of communication included “community consultant visits” (56%), “public meetings” (55%), “radio ads” (54%) and “open houses” (50%).
- Letters mailed to their homes held the greatest appeal for men (88% versus 77% among women), and respondents from Winnipeg (86% versus 79% from Thompson residents).

4.1.2 Priorities in Looking at Future Hydro Developments

Respondents were asked to comment on what they think would be their biggest concerns if the proposed hydro developments were to be built. This included questions about:

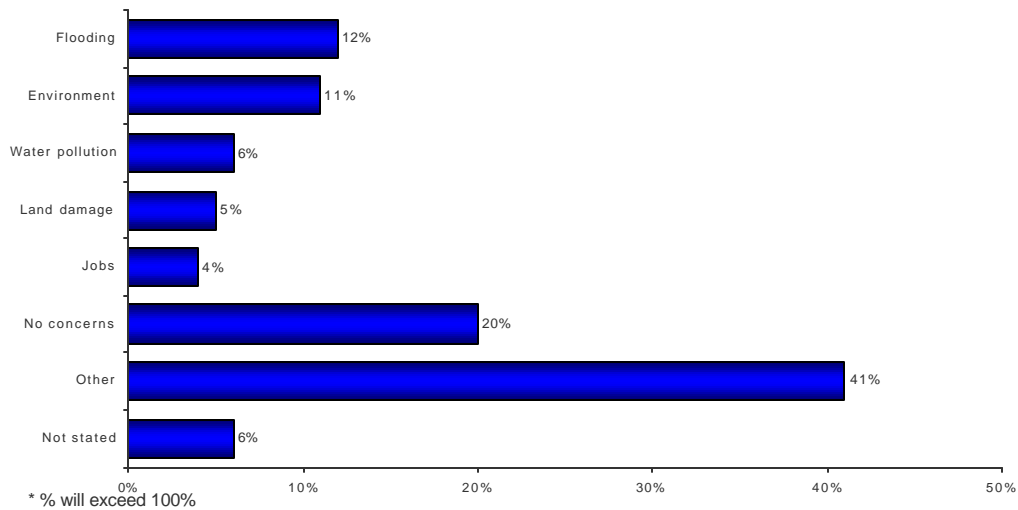
- Concerns about the proposed projects, as well as any perceived benefits.
- The priorities for these projects.
- Trust of Manitoba Hydro.

Each of these is discussed in turn.

CONCERNS AND BENEFITS

Biggest Concerns About The Proposed Wuskwatim or Notigi Projects Total Mentions*

Q12b “What concerns would you have if either the Wuskwatim or Notigi developments were to be built? What would be your biggest concern?” (n=163)



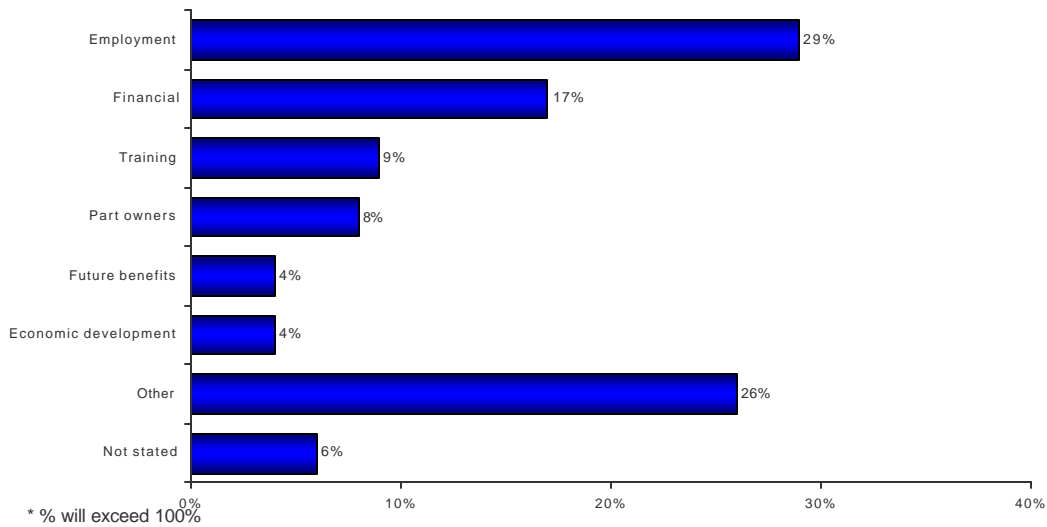
Note: Results cited in the above graph represent the most common responses to Question 12b. Readers are invited to refer to the detailed tabular results for a complete list of responses to this open-ended question.

- When asked directly what concerns they would have about either the Wuskwatim or Notigi project in the event that they are built, a significant number of items were mentioned.
- Among the concerns mentioned most frequently were “flooding” (12%) and “environmental damage” (11%). “Water pollution” (6%) and “land damage” (5%) were cited less often as respondents’ biggest concern over these projects being built.

- One-in-five respondents (20%) said they would have no concerns if either of the proposed projects were to be built. Among those, one-quarter of Thompson respondents (25%) said they would have no concerns, compared to only eight per cent of those surveyed in Winnipeg.

Biggest Benefits of the Proposed Wuskwatim or Notigi Projects Total Mentions*

Q13b “What would you see as benefits if either the Wuskwatim or Notigi developments were built? What would be the biggest benefit?” (n=161)



Note: Results cited in the above graph represent the most common responses to Question 13b. Readers are invited to refer to the detailed tabular results for a complete list of responses to this open-ended question.

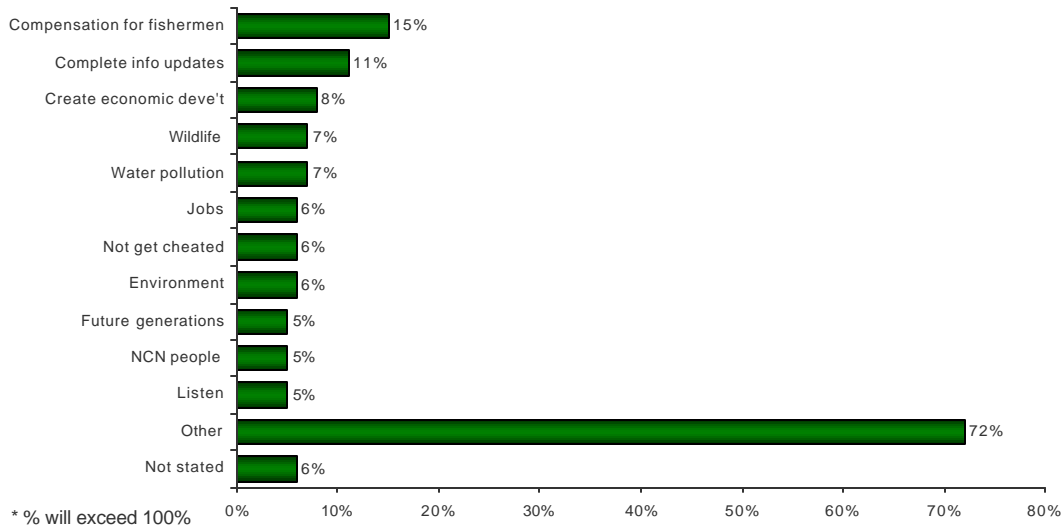
- The vast majority of respondents from Thompson and Winnipeg associated benefits with the potential hydro developments at Notigi and Wuskwatim. When these respondents were asked to describe the largest single benefit to be gained by these developments, there were many different responses. Despite this, nearly three-in-ten (29%) respondents pointed to jobs. This benefit was echoed across all sub-groups surveyed.
- Several of the single largest benefits cited also related to economic benefits NCN may receive as a result of this project. These included “financial” benefits (17%), being “part-owners” (8%) and “economic development” (4%).

PROJECT PRIORITIES

Project Priorities

Total Mentions *

Q14 “What are the most important things that Chief and Council and the Future Development Team should keep in mind as they do more planning about future development? In other words, what are your priorities for these projects (e.g. protect fish, create new economic development)?” (n=175)



Note: Results cited in the above graph represent the most common responses to Question 14. Readers are invited to refer to the detailed tabular results for a complete list of responses to this open-ended question.

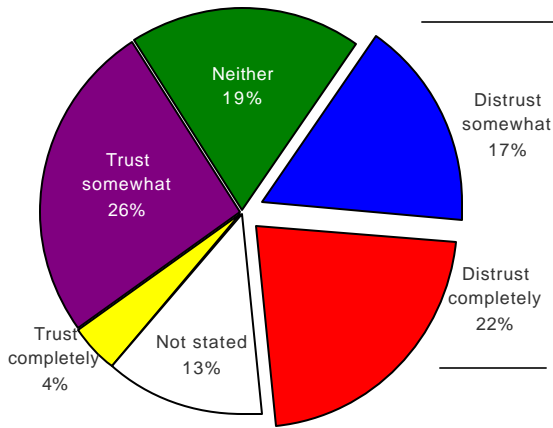
- All respondents were asked what priorities they believe Chief and Council and the Future Development Team should keep in mind as they plan for future development.
- Many suggestions were given, but adequate compensation for fisherman (15%) was expressed by most off-site members. Environmental and economic issues were also on the list of priorities as was the concern that members want to be kept fully informed as to the status of these projects .

TRUST OF MANITOBA HYDRO

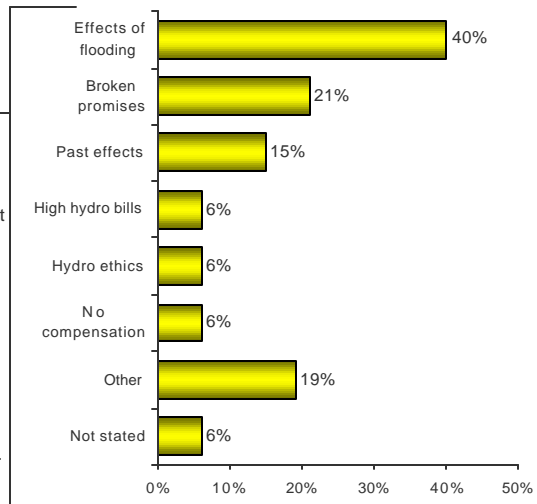
Trust of Manitoba Hydro

Total Mentions*

Q15a "Please tell me to what extent you trust Manitoba Hydro. Do you trust them completely, do you trust them somewhat, do you somewhat distrust them, do you distrust them completely or do you neither trust nor distrust them?" (n=175)



Q15b "Please tell us why you feel this way" (n=67)



* % will exceed 100%

Note: Results cited in the above graph represent the most common responses to Question 15b. Readers are invited to refer to the detailed tabular results for a complete list of responses to this open-ended question.

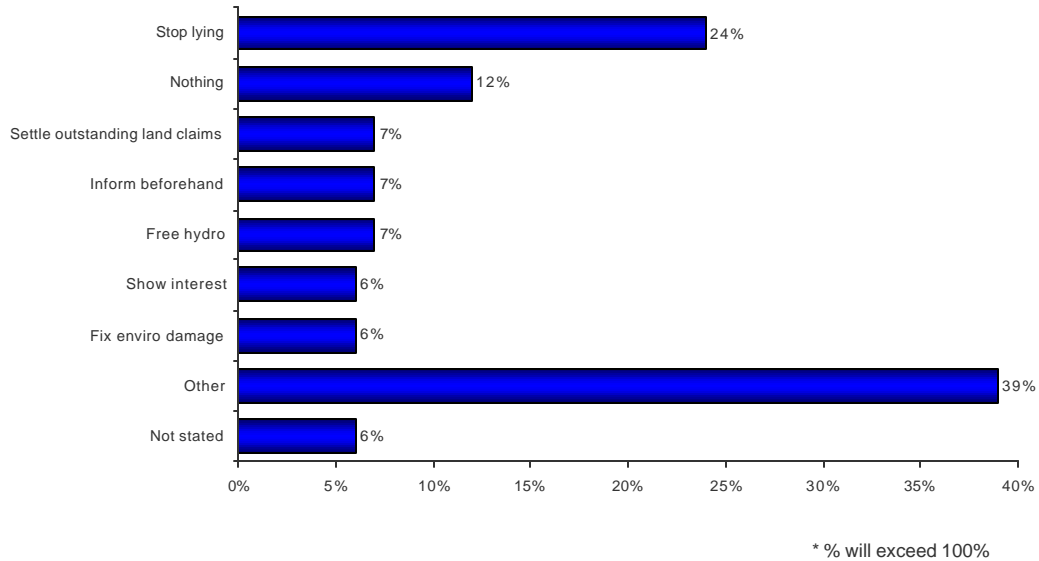
- When asked about their trust of Manitoba Hydro, four-in-ten (39%) members from Thompson and Winnipeg indicated that they are distrustful of Manitoba Hydro, with 22 per cent saying that they completely distrust the Corporation.
- Women (28% completely distrust) were more likely to be distrustful than were men (13% completely distrust).

- When asked why they distrust Manitoba Hydro, four-in-ten (40%) respondents pointed to the effects of flooding on the environment and people, while fifteen per cent pointed to “past effects” and 21 per cent pointed to “broken promises” made by Manitoba Hydro. Some also indicated that they distrust Manitoba Hydro because the company “makes money on the backs of other people” (6%), “flooded the land before without informing NCN” (3%) and “could turn their backs on the deal” (3%). There were many other reasons cited by fewer respondents and readers are invited to refer to the detailed tabular results for a complete list of responses to this open-ended question.
- Distrust based on the effects of flooding was highest among Thompson members (51% versus 15% from Winnipeg residents).

Suggestions to Regain Trust in Manitoba Hydro

Total Mentions* (n=67)

Q15c "What would it take to regain that trust?"



Note: The results cited in the above graph represent the most common responses to Question 15c. Readers are invited to refer to the detailed tabular results for a complete list of responses to this open-ended question.

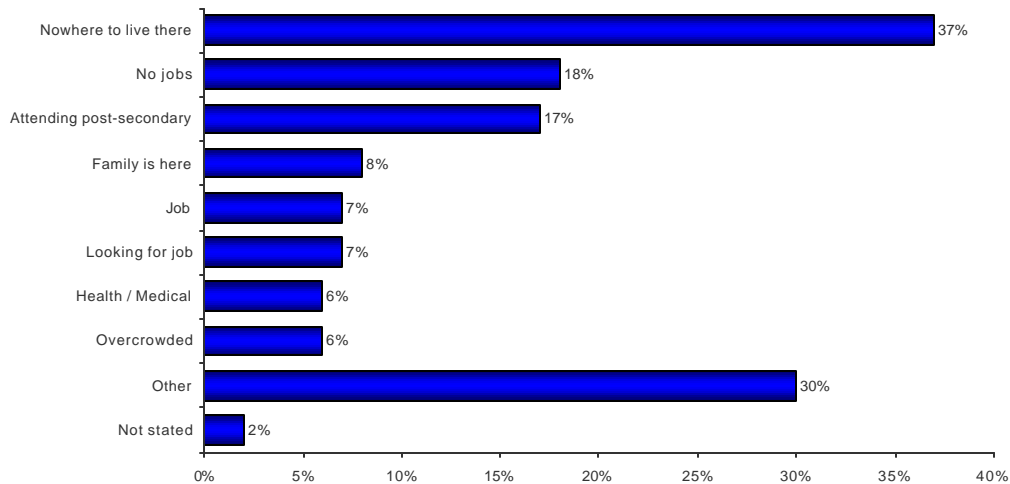
- When asked what it would take for Manitoba Hydro to regain their trust, the single most common response was that Manitoba Hydro should “stop lying” (24%). Much smaller percentages of respondents felt that trust could be regained through the “settlement of outstanding claims” (7%), “making sure members are informed beforehand” (7%) or by giving residents “free hydro” (7%).
- Twelve per cent of respondents said there was nothing Hydro could do to regain their trust.
- Men (33% versus 19% among women) were more likely to indicate that trust could be regained if Manitoba Hydro kept their promises.

4.2 Migration

Respondents were asked why they currently lived away from Nelson House / South Indian Lake and whether they planned to move back to Nelson House, Thompson or South Indian Lake if either of the proposed developments were to proceed. The results are outlined below.

Reasons for Living Away From Home Community Total Mentions* (n=175)

Q16 “Why are you currently living away from Nelson House/South Indian Lake?”



* % will exceed 100%

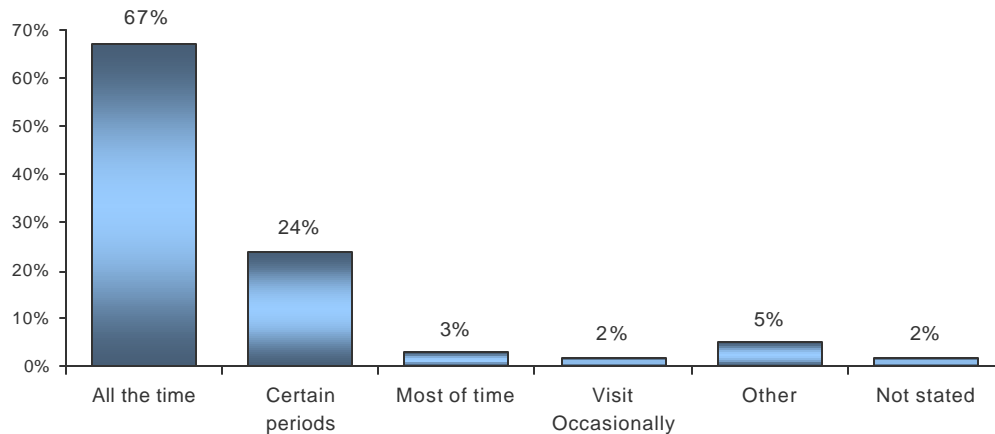
Note: The results cited in the above graph represent the most common responses to Question 16. Readers are invited to refer to the detailed tabular results for a complete list of responses to this open-ended question.

- More than one-in-four (43%) respondents from Thompson and Winnipeg said that housing concerns (lack of housing – 37% and overcrowding – 6%) were the reasons they currently reside outside of Nelson House / South Indian Lake.

- Employment was also mentioned by respondents as a reason for living away from Nelson House / South Indian Lake. Eighteen per cent said there were no jobs there, while seven per cent said they had another job outside of their home community and another seven per cent said they were looking for a job.
- Other reasons cited included attending post-secondary education (17%), family (8%), and health/medical reasons (6%). It should be noted that there were many other reasons given by members residing in Thompson and Winnipeg as to why they currently did not live in Nelson House or South Indian Lake. These constituted the “other” category and can be viewed in detail in the tabular results provided.
- Women (45% versus 25% among men) and older respondents (40% over 55 years) were most likely to complain of the lack of housing available and poor housing in their home community as the main reason they have chosen to live elsewhere.

Time Living Away From Nelson House / SIL (n=175)

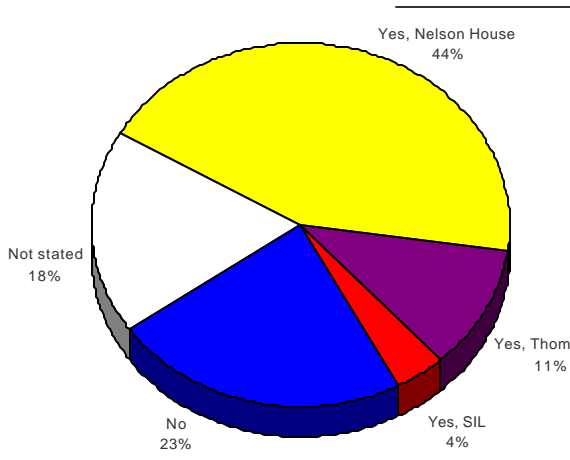
Q17 “Do you live away from Nelson House/South Indian Lake all the time or only for certain periods?”



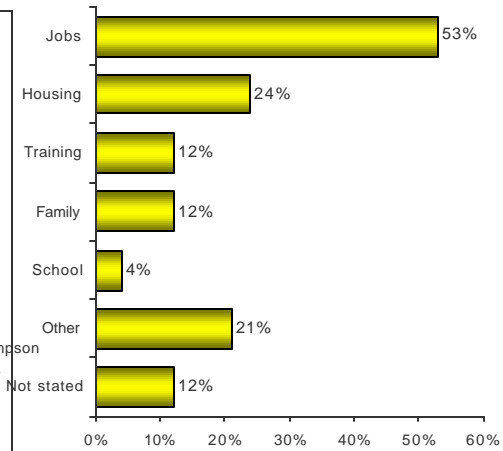
- When asked whether they live in Thompson / Winnipeg on a full-time or part-time basis, two-thirds of respondents (67%) said they lived away from their home community all of the time, while one-quarter (24%) said there were only certain times they lived away from Nelson House / South Indian Lake.
- Ninety-four per cent of residents from Winnipeg said that they live away from their home communities all of the time, and 90 per cent of older members (those ages 55 and older) also pointed to this permanent living arrangement. Women (74%) were also more likely than men (58%) to report that they live away from their home community all the time.

Possibility of Return

Q18a "If either of the possible future hydro-electric developments goes ahead, are you planning to relocate to Nelson House Thompson or SIL?" (n=175)



Q18b "If yes, please tell us why you and your family would move back?" (n=103)



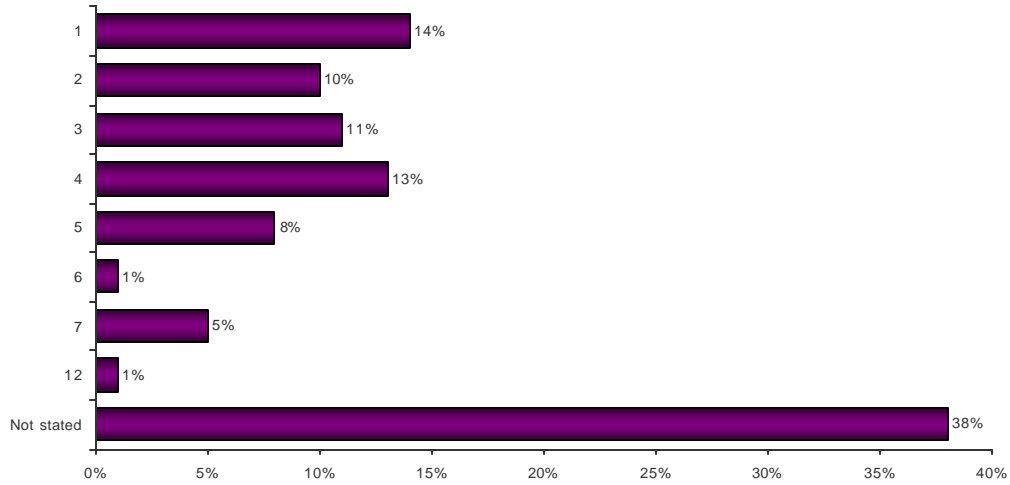
Note: The results cited in the above graph represent the most common responses to Question 18b. Readers are invited to refer to the detailed tabular results for a complete list of responses to this open-ended question.

- Over one-half (59%) of Thompson and Winnipeg respondents indicated that if either of the proposed developments were to proceed they would be likely to relocate to Nelson House, Thompson or South Indian Lake. Most of those planning to relocate (44%) said they would relocate to Nelson House.
- Nearly one-quarter (23%) said they would not relocate and eighteen per cent of respondents were uncertain as to whether they would relocate as the result of the proposed hydro-electric developments.

- Thompson members were much more likely than those residing in Winnipeg to say they would be interested in relocating to either Nelson House (51% of Thompson respondent versus 27% of Winnipeg respondents) or South Indian Lake (6% of Thompson respondent versus no Winnipeg respondents) if development of these hydro projects were to go ahead.
- Although one in four (27%) Winnipeg respondents indicated that they would consider moving to Nelson House if either of the proposed projects proceeds, the majority of Winnipeg respondents (53%) indicated that they would not relocate as a result of the proposed hydro developments.
- Among those who intended to move, the single largest motivator was to secure a job (53%). This employment reason was cited most often by men (71% versus 40% for women) and younger respondents (60% among those aged 16 to 34).

Number of Family Members Returning

Q18c “How many family members might move back with you?” (n=103)



- Most respondents who said they were planning on relocating to Nelson House, Thompson or South Indian Lake were unable to identify the number of family members who might move back with them (38%).
- Among those who did identify the number of family members who would relocate with them, the results indicate that most families would move back with an average of 3.4 family members.

4.3 Employment Opportunities

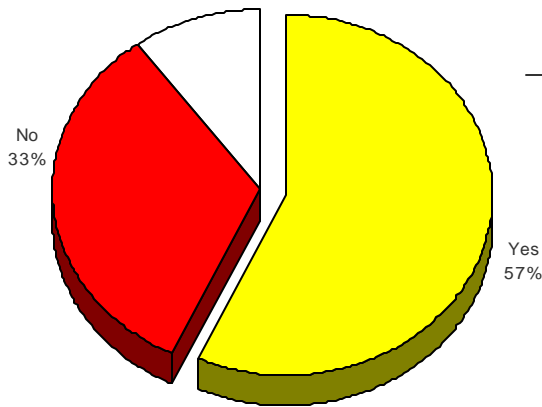
As part of the survey, respondents were asked whether they are interested in employment opportunities associated with the construction of the proposed developments, as well as post-construction and operations jobs with Manitoba Hydro. In both cases, respondents were asked what types of employment opportunities they would like to pursue and if they perceived any barriers to obtaining employment in these areas.

4.3.1 Construction Employment

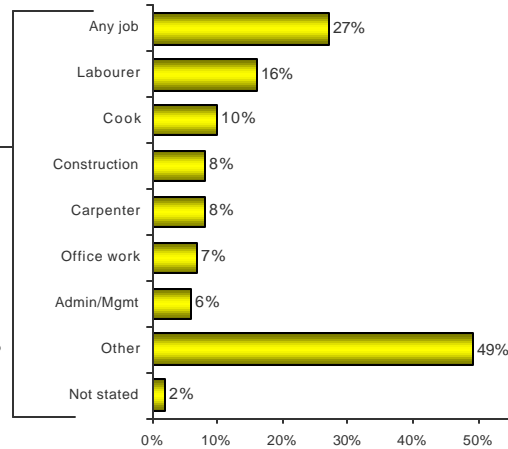
Construction Employment Opportunities

Total Mentions:**

Q19a “Are you interested in pursuing employment opportunities during the construction phase of the possible new hydro developments?”
(n=175)
Not stated
10%



Q19b “If yes, what kind of job would you like to obtain?” (n=100)



** % will exceed 100%

Note: The results cited in the above graph represent the most common responses to Question 19b. Readers are invited to refer to the detailed tabular results for a complete list of responses to this open-ended question.

- Over one-half (57%) of Thompson and Winnipeg respondents were interested in employment opportunities during the construction phase of the proposed new hydro developments.
- Respondents currently looking for employment (81%) and those with part-time employment (68%) were most inclined to be interested in construction phase employment. Thompson residents (65% versus 39% from Winnipeg), men (71% versus 48% of women) and younger respondents (59% for 16-34 years) also expressed interest.

- Among the number of respondents interested in construction phase employment, twenty-seven per cent are interested in any type of position. General labourer (16%), cook (10%), construction (8%) and carpenter (8%) were mentioned with somewhat lower frequency. Office work (7%) and administrative/management (6%) were also cited by respondents as types of employment they would like to obtain during the construction phase of these projects.
- Women were more open to any type of construction phase employment (35% versus 20% for men) as were younger respondents (29% among those aged 16 to 34).
- When asked if they saw any barriers to obtaining a job during construction of the possible new hydro developments, 59 per cent of respondents could not think of any barriers.
- Of those who did identify barriers, the most commonly cited included “training” (12%), “education” (7%), “qualifications” (4%), “living accommodations” (5%), “funding” (3%) and “child care” (3%). Other perceived barriers were cited with much less frequency.

4.3.2 Post-Construction Employment

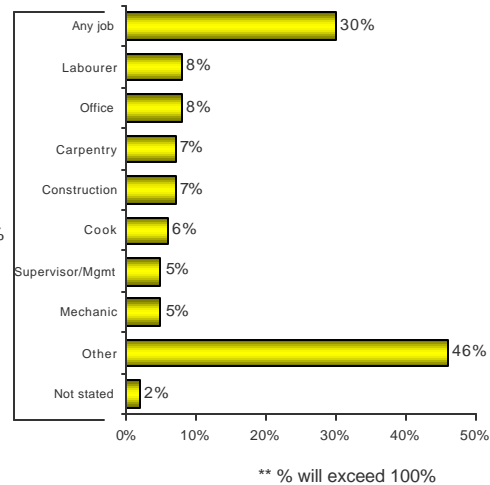
Post Construction Employment Opportunities

Total Mentions**

Q21a “Are you interested in pursuing employment with Manitoba Hydro once construction is over and the possible new hydro developments are operating?” (n=175)



Q21b “If yes, what kind of job would you like to obtain?” (n=86)



Note: The results cited in the above graph represent the most common responses to Question 21b. Readers are invited to refer to the detailed tabular results for a complete list of responses to this open-ended question.

- Nearly one-half (49%) of survey participants were interested in pursuing employment with Manitoba Hydro once the construction phase is completed and the new hydro developments are operating.
- Those currently looking for employment (76%), men (69% versus 35% for women), part-time employees (59%) and residents of Thompson (59% versus 25% from Winnipeg) were the most interested in post-construction employment with Manitoba Hydro. Comparatively higher levels of interest also existed among younger respondents (53% for those ages 16 to 34, falling to 20% for those 55 years and older).

- In terms of the type of post construction phase employment desired, three-in-ten (30%) were willing to take any job available. Labourer (8%), construction (7%), carpenter (7%) and cook (6%) were mentioned less frequently. Again, respondents also pointed to office work (8%) and office or administrative work (5%) as other types of jobs they would like to obtain. A number of other post-construction jobs were mentioned and these can be seen in the detailed tabular results provided.
- Those respondents currently looking for work (44%), women (39% versus 24% for men) and those aged 16 to 34 years of age (33%) were most open to any operations position with Manitoba Hydro.
- Among those interested in post-construction employment, 62 per cent indicated that they did not see any barriers to obtaining this type of job.
- Of those who did cite barriers, the most commonly cited were “training” (13%) and “education” (9%), as well as the related “experience” (3%) and “qualifications” (3%). “Living accommodations” (6%) were also a perceived barrier cited by respondents.

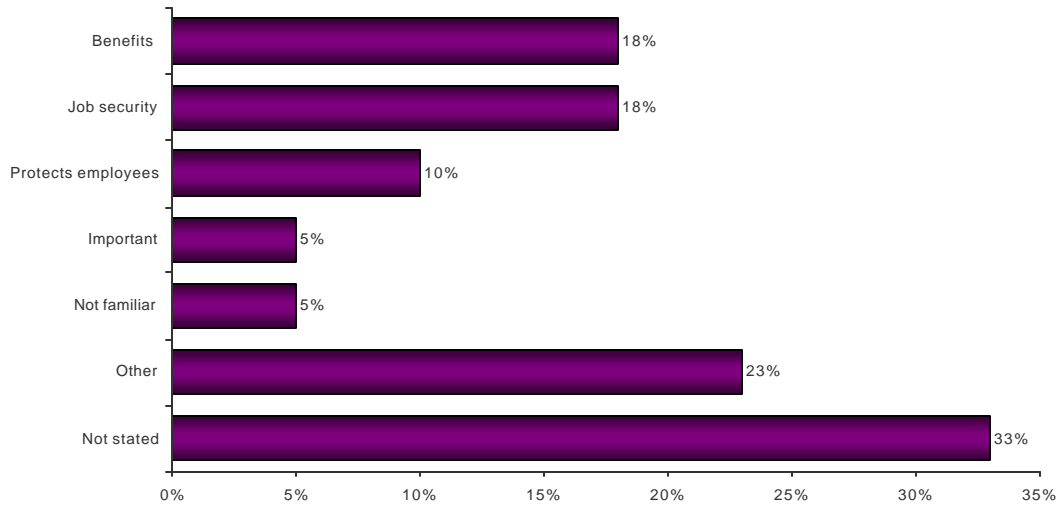
4.4 Knowledge of Unions

Manitoba Hydro has collective agreements with several unions and NCN members working on the Wuskwatim or Notigi projects may need to become part of these unions as a condition of employment. To determine their knowledge about unions, NCN members living in Thompson and Winnipeg were asked a series of questions about:

- What they think about being in a union
- Prior union membership and activity as a union member, and
- Knowledge of the Burntwood Nelson Collective Agreement.

Perceptions of Union Membership

Q23 “What do you think about being in a union and why?” (n=175)



Note: The results cited in the above graph represent the most common responses to Question 23. Readers are invited to refer to the detailed tabular results for a complete list of responses to this open-ended question.

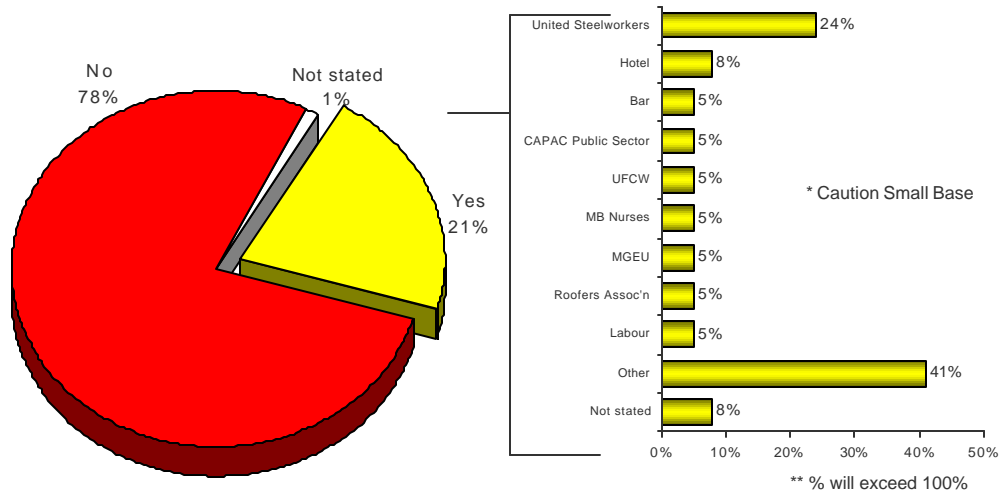
- When asked about their thoughts on unions, respondents offered a series of generally positive comments. Just under one in five respondents pointed to either “benefits” (18%) and “job security” (18%), while ten per cent noted that organized labour “protects employees”.
- Those most likely to be favourably disposed towards unions were those residing in Thompson, those employed on a full-time basis or who were currently seeking employment, men and respondents aged 35 to 54 years.

Prior Union Membership

Total Mentions**

Q24 "Have you ever been a member of a labour union?" (n=175)

Q25 "Which union did/do you belong to?" (n=37*)



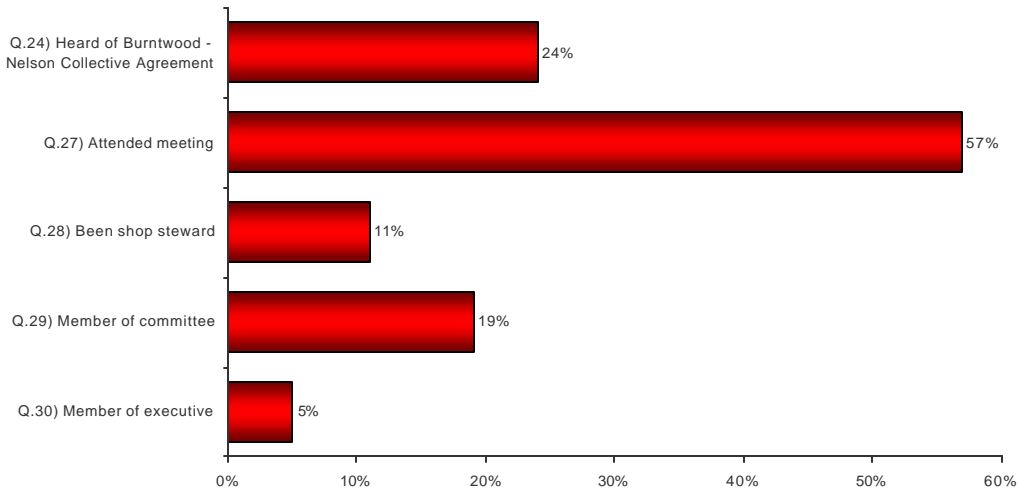
Note: The results cited in the above graph represent the most common responses to Question 25. Readers are invited to refer to the detailed tabular results for a complete list of responses to this open-ended question.

- One in five (21%) of the Thompson and Winnipeg respondents were currently, or had in the past, been a member of a labour union.
- Among the small number of respondents who had been union members, those most likely to have held union membership were those with current part-time employment (50%), middle-aged respondents (30% for 35-54 years) and men (28% versus 17% of women).
- Among this small sampling of respondents, the United Steelworkers (24%) was mentioned most often as the union to which respondents currently belong or had belonged to in the past. There were many other unions mentioned and these can be seen in the detailed tabular results included with this report.

- The complete list of union related employment currently or formerly held by survey respondents can also be found in the detailed tables.

Union Participation

Percentage indicating they had participated: (n=37*)



* Caution Small Base

- Nearly one-quarter (24%) of those surveyed had heard of the Burntwood-Nelson Collective Agreement. All of these were members living in Thompson. None of the Winnipeg members surveyed had heard of this collective agreement.
- Among the small number of respondents (n=37) with a union background, more than one-half (57%) had attended a union meeting, nineteen per cent had been a member of a union committee, eleven per cent had served as a shop steward, and five per cent had served on a union executive.

4.5 Interest in Business Opportunities

As with employment opportunities, respondents were asked to indicate whether they would be interested in pursuing business opportunities related to the projects and, if so, what types of opportunities they would like to pursue. They were also asked whether they could see any barriers to realizing their business goals, and whether they had ever owned a business or had had business training.

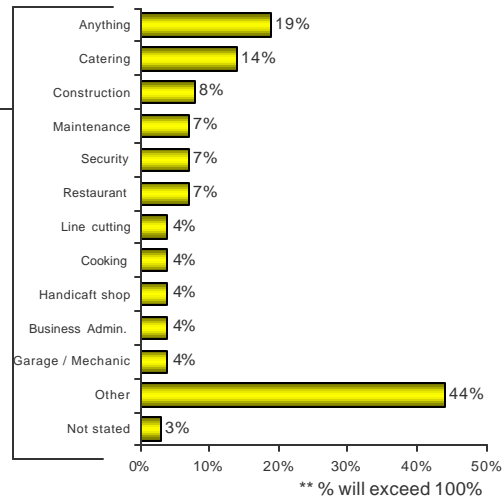
Interest in Business Opportunities

Total Mentions**

Q32a "Are you interested in pursuing contracts and business opportunities related to the possible new hydro developments?" (n=175)



Q32b "What kind of business opportunity do you see with the new hydro developments?" (n=90)

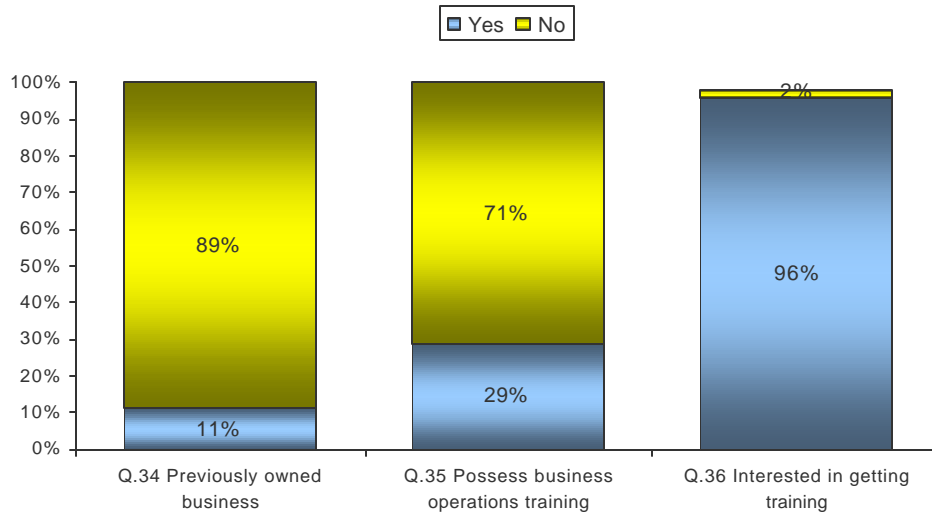


- Fully one-half (51%) of Thompson and Winnipeg respondents were interested in pursuing contracts and business opportunities related to the possible new hydro developments.
- In particular, those currently looking for employment (74%) or who were employed part-time (68%) were more likely to express interest in business opportunities related to the proposed projects. Respondents residing in Thompson (65% versus 20% from Winnipeg), men (63% versus 44% of women), and younger (51% for 16-34 years) and middle-aged (55% for 35-54 years) respondents also expressed interest in pursuing project-related business opportunities.

- In terms of the types of potential business opportunities respondents wished to pursue, the most frequently offered responses were “any type of project” (19%) or “catering” (14%). Women (29% versus 9% of men) and young respondents (24% of those ages 16 to 34 years) were most likely to be willing to point to any type of business as being appealing.
- The majority of respondents (72%) saw no barriers to developing their business idea. Of those who did perceive barriers, the most commonly cited were funding (9%), training (3%) and the inability to develop a business plan (3%).

Knowledge of Business

(n=90)



- Thompson and Winnipeg respondents with a declared interest in pursuing contracts and business opportunities related to the proposed hydro developments (n=90) were asked if they had previously owned or operated a business. Only one-in-ten (11%) respondents had this type of business background.
- Three-in-ten (29%) respondents indicated that they have training in operating a business.
- The vast majority (96%) of those interested in pursuing contracts and business opportunities related to new Hydro developments were interested in receiving business training.

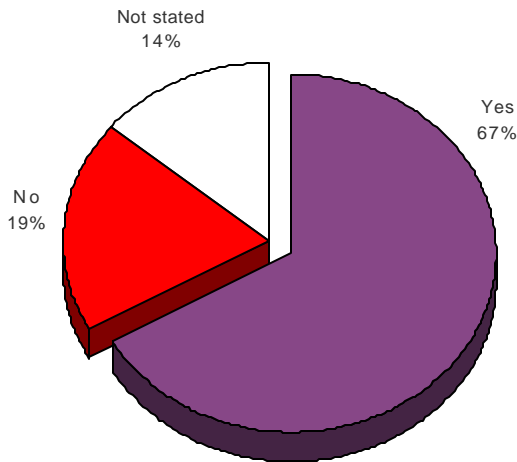
4.6 Interest in Training Opportunities

If the proposed Wuskwatim and/or Notigi developments go ahead, NCN may establish a company called the Atoskiwin Training and Employment Centre (A-TEC) in Nelson House to carry out training and do job referrals for the projects. To help NCN plan for programming at this proposed facility, respondents were asked questions about their interest in training at this facility and their specific training interests.

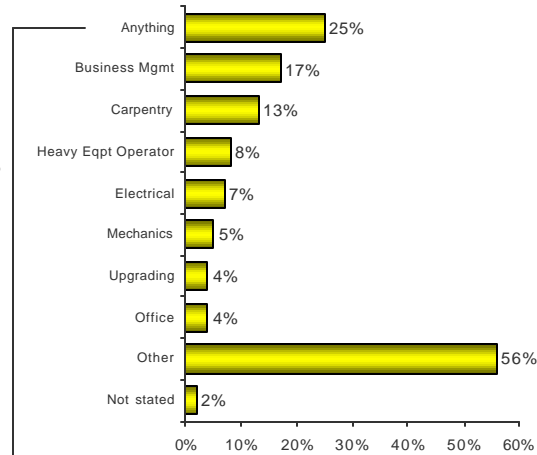
Interest in Training Opportunities

Total Mentions**

Q37a "If A-TEC is built, would you be interested in taking training at this Nelson House facility for jobs related to the possible new hydro developments?" (n=175)



Q42b "If yes, what kind of training would you like to take?" (n=118)



** % will exceed 100%

- Nearly seven-in-ten (67%) respondents indicated that they would be interested in taking training at the A-TEC facility for jobs related to the possible hydro developments.
- Those most likely to express interest in training opportunities were those currently looking for work (86%) and those currently in part-time employment situations (77%). Younger respondents (70% for 16-34 years, falling to 30% for 55+ years) and men (78% versus 60% for women) were more receptive to the idea of hydro-related training.

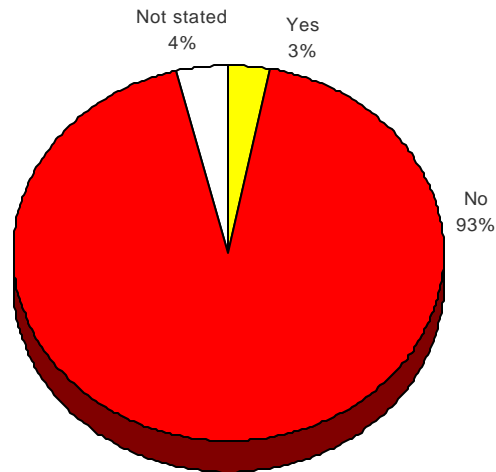
- Respondents interested in training opportunities were asked what type of training they would like to receive. Among these respondents, one-quarter (25%) were open to any type of training, while seventeen per cent were particularly interested in business management training. Thirteen per cent desired training in carpentry, while eight per cent expressed interest in heavy equipment operator, electrical (7%) and mechanical (5%) training. There were many other areas of training that respondents were interested in pursuing should A-TEC be built.
- Women (32% versus 16% for men) and Thompson residents (28% versus 12% from Winnipeg) were most open to any type of training opportunity.

4.7 Past Manitoba Hydro Training and Employment

Respondents aged 25 years and older were asked whether they had received training at the Limestone Training and Employment Agency

Limestone Training and Employment Agency Training (n=136)

Q43a) "Did you receive training at the Limestone Training and Employment Agency?"



- Only three per cent of respondents indicated that they had trained with this organization.
- Those most likely to have received training at the Limestone Training and Employment Agency were aged 55 years and older (10%) and men (8% versus 0% for women).

Employment on Limestone Construction (n=136)

Q44a “Did you get a job working on the Limestone construction project?”



- Among respondents aged 25 years and older, only four per cent indicated that they worked on the Limestone construction project. All of these respondents were men over the age of 35 years. Respondents who are currently employed elsewhere in a full-time position (10%) and students (7%) were more likely to report that they had worked on the Limestone construction project.
- Respondents who reported that they had not worked on the Limestone project were asked why they did not work on this project. The majority (73%) were unwilling or unable to answer the question. Nine per cent stated that they were too young, six per cent said they were attending school at the time and five per cent said they didn't apply. Other reasons were cited with much less frequency.

Other Hydro Employment Experience

(n=136)

Q45a "Have you worked on the construction of any other hydro projects?"



- Only eight per cent of both Thompson and Winnipeg respondents claimed to have worked on other hydro projects. Among the small sampling (n=11) of those who reported personal work experience on hydro projects, most said they were involved in the Notigi project (45%).
- Those most likely to have other hydro-related experience were ages 55 years and older (30%), men (20% versus 1% for women) and those currently employed on a full-time basis (15%).

4.8 Traditional Activities / Resource Use

The survey asked respondents a number of questions about their use of the South Indian Lake Trapline Zone and the NCN Resource Management Area. These questions related to:

- Travel on waterways within these areas
- Resource and traditional activities undertaken in these areas, including hunting, fishing, berry picking and visiting important sites.

TRAVEL ON LOCAL WATERWAYS

Travel on Local Waterways

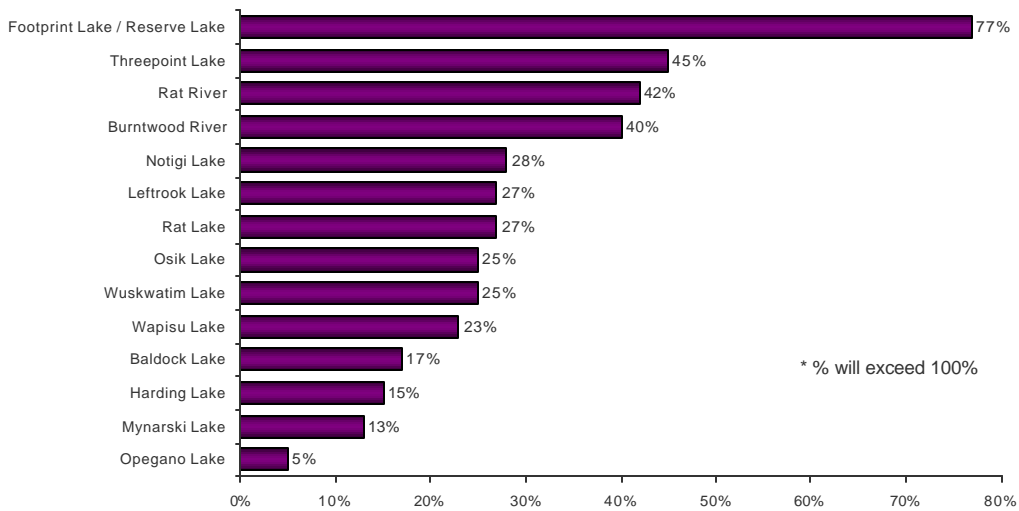
Q46 "Have you travelled on lakes and rivers in the South Indian Lake Trapline Zone or the NCN Resource Management Area in any season within the last year, for example, for hunting, fishing, trapping or other uses?" (n=175)



- One-third (34%) of surveyed NCN members living in Thompson and Winnipeg had travelled in the South Indian Lake Trapline Zone or the NCN Resource Management Area within the last year.
- Travel in these regions was especially high among Thompson residents (42% versus 16% from Winnipeg) and men (46% versus 26% among women). Fifty-five per cent of respondents who were employed on a part-time basis also reported travelling these waterways during the past year, versus 40 per cent of those that were employed full-time and 36 per cent of those currently looking for work

Areas Travelled in NCN Resource Management Area Total Mentions* (n=60)

Q47 Where have you travelled on these waterways within the last year?

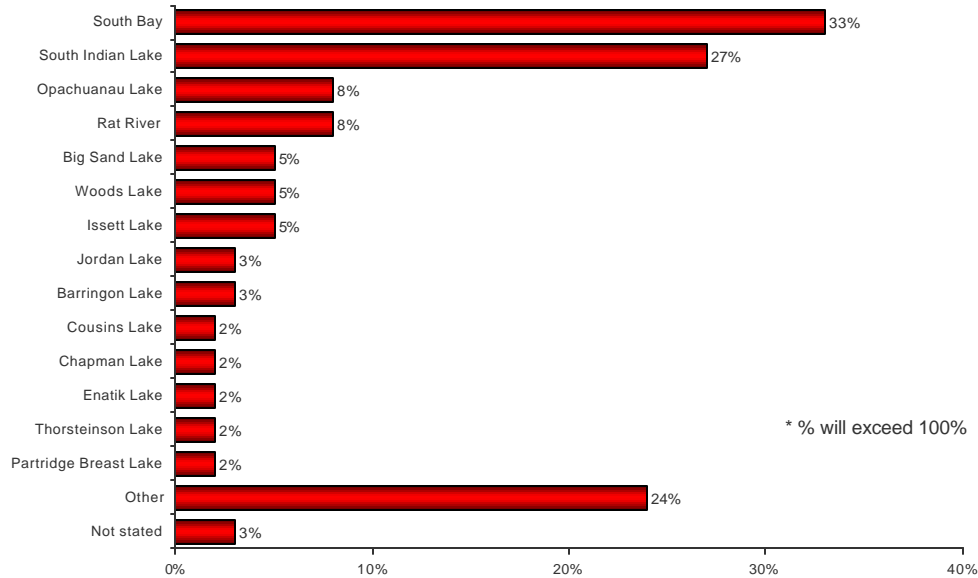


- More respondents had travelled in the NCN Resource Management Area than in the South Indian Lake Registered Trapline Zone. Within the NCN Resource Management Area, Footprint Lake / Reserve Lake was the most frequently used area (77%), well ahead of any other location in the NCN Resource Management Area. The number of destinations and areas visited by those who had travelled in this area within the last year was extensive, generating several dozen distinct mentions.
- Those members who are currently employed full-time (92%), reside in Winnipeg (88%), or are younger respondents (82%) were most likely to have visited Footprint Lake / Reserve Lake.

Areas Travelled in South Indian Lake Trapline Zone

Total Mentions* (n=60)

Q47 "Where have you travelled on these waterways within the last year?"

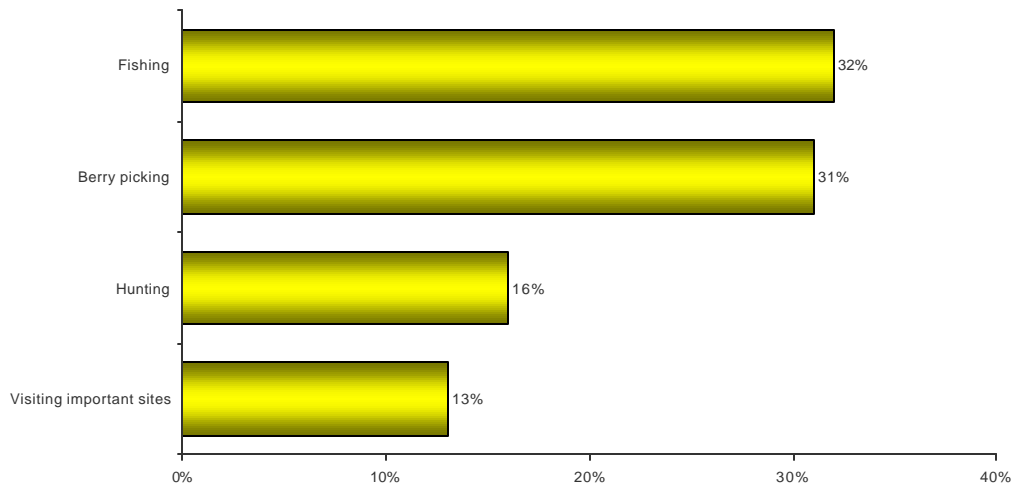


- Although the South Indian Lake Trapline Zone is somewhat less travelled, the number of destinations and areas visited by those who had travelled in this area within the last year was also extensive.
- Two areas that had been travelled by most respondents were South Bay (33%) and South Indian Lake (27%).

RESOURCE AND TRADITIONAL ACTIVITIES

Resource and Traditional Activities Within the Identified Areas
 - Percent of Respondents Indicating Participating in these Activities -

Q48 "In any season within the last year, did you do any of the following activities within the NCN Resource Management Area or the South Indian Lake Trapline Zone?" (n=175)



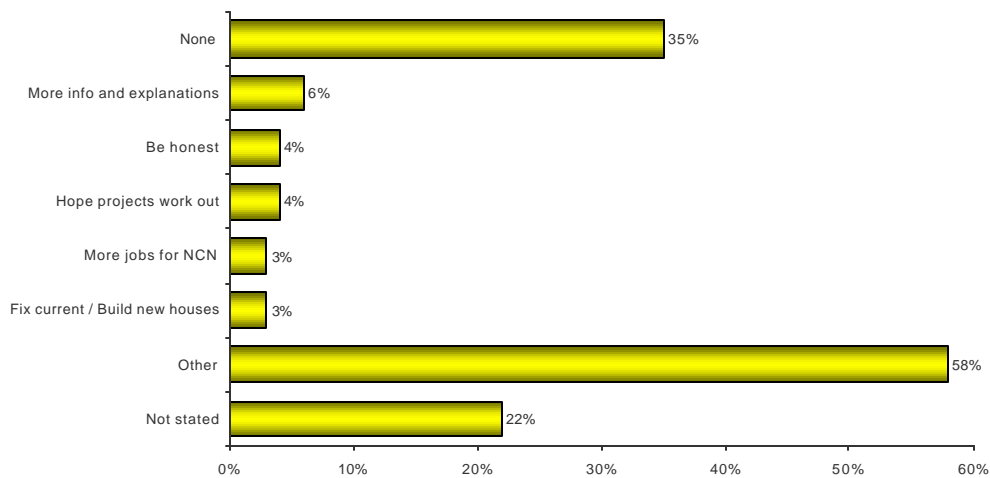
- Nearly one-third (32%) of those who had travelled in the South Indian Lake Registered Trapline Zone or the NCN Resource Management Area in the past year fished while in the region. Those most likely to fish were men (42% versus 25% of women), Thompson respondents (41% versus 10% from Winnipeg) and those with part-time work (50%).
- Thirty-one per cent of visitors to these regions picked berries. Those most likely to pick berries were respondents ages 55 years and over (70%).
- Sixteen per cent of those travelling to these regions hunted while there. Those most likely to hunt were men (26% versus 9% of women), those aged 35 to 54 years (19%), and those employed part-time (36%).

- Only thirteen per cent of those travelling to these regions visited important sites. Those most likely to visit important sites were over 55 years of age (20%), men (18% versus 9% of women) and those with part-time work (23%).

4.9 Other Issues and Concerns

Final Comments / Concerns

Q49 "Do you have any other comments or concerns?" (n=175)



- At the end of the survey, respondents were given the opportunity to offer any further comments or concerns. Although a large number of respondents (57%) either had no further comments or did not answer the question, there were many final comments and concerns expressed by the remaining forty three percent of respondents. Readers are invited to refer to the detailed tabular results for a complete list of responses to this open-ended question.

APPENDIX FOUR

**ECONOMIC IMPACT
ASSESSMENT**
*of Building, Operating
and Maintaining*
WUSKWATIM

March 2003

(Final Report)



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WUSKWATIM
Economic Impact Assessment

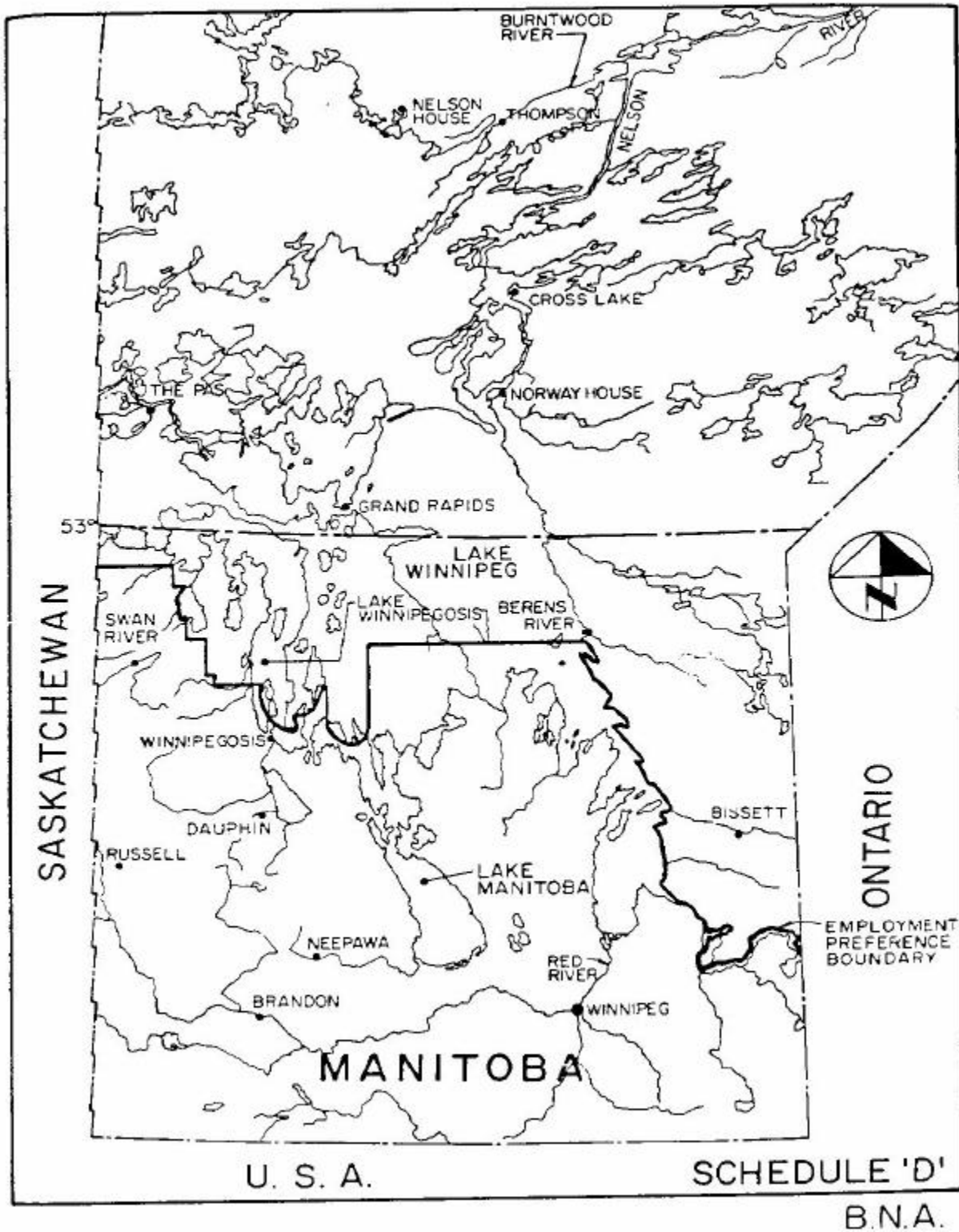


Figure 1 – Northern Manitoba Boundary as defined by the Nelson Burntwood Collective Agreement

Executive Summary

The Wuskwatim project is a proposed 200 MW generating station at Taskinigup Falls on the Burntwood River near Thompson, Manitoba. The project also includes the necessary transmission facilities including a new switching station near the generating station site and a transmission line to bring the power into the existing Manitoba Hydro grid.

The generation component of the project will take six years to build, from 2004 to 2009, and is expected to operate for more than sixty years. Wuskwatim Generating Station will cost an estimated \$506 million in 2002 dollars, and the new switching station and transmission line will cost an estimated \$19.87 million in 2002 dollars. These project costs do not include costs for planning studies.

The economic impact analysis of the project took into account only on-site expenditure costs. It did not include annual water rental charges of approximately \$5.1 million. The new \$21.6 million Birchtree Station, to be built near Thompson, was excluded from the analysis because it will be used primarily for improving system reliability rather than conveying power from Wuskwatim.

The major economic benefit of the project is from construction. In total, the entire project will contribute to Canada as follows:

- ! 9,830 person-years of direct and indirect employment
- ! \$454.2 million in labour income
- ! \$186.6 million in taxes
- ! \$639.9 million in GDP.

Employment

Direct and indirect employment from building, operating, and maintaining the project is expected to total 9,830 person-years, which includes 5,698 person-years for Manitoba, 4,132 person-years for the rest of Canada, 1,072 person-years for Northern Manitoba, and 611 person-years for Northern Manitoba Aboriginal people.

During project construction, direct and indirect employment is expected to total 8,744 person-years, which includes 4,870 person-years for Manitoba, and 3,874 person-years for the rest of Canada.

During operation and maintenance, direct and indirect employment is expected to total 1,086 person-years, which includes 828 person-years for Manitoba and 258 person-years for the rest of Canada.

WUSKWATIM

Economic Impact Assessment

Labour Income

Labour income will total \$454.2 million, which includes \$288.6 million for Manitoba, \$165.6 million for the rest of Canada, \$135.8 million for Northern Manitoba, and \$79.2 million for Northern Manitoba Aboriginal people.

During project construction, labour income is expected to total \$403.2 million, which includes \$246.6 million for Manitoba, and \$156.6 million for the rest of Canada.

During operation and maintenance, labour income is expected to total \$51.0 million, which includes \$42.0 million for Manitoba and \$9.0 million for the rest of Canada.

Taxes

Provincial, federal, and local taxes will total \$186.6 million, comprising \$116.4 million for Manitoba and \$70.2 million for the rest of Canada.

During project construction, federal, provincial, and local taxes are expected to total \$166.2 million, which includes \$100.2 million for Manitoba, and \$66.0 million for the rest of Canada.

During operation and maintenance, federal, provincial, and local taxes are expected to total \$20.4 million, which includes \$16.2 million for Manitoba and \$4.2 million for the rest of Canada.

GDP

Building, operating, and maintaining the project is expected to contribute \$639.9 million to Canada's GDP, with \$366.2 million in Manitoba alone and \$273.7 million in the rest of Canada.

During construction, the project is expected to contribute \$567.9 million to Canada's GDP, with \$312.8 million in Manitoba alone and \$255.1 million in the rest of Canada.

During operation and maintenance, the project is expected to contribute \$72.0 million to Canada's GDP, with \$53.4 million in Manitoba alone and \$18.6 million in the rest of Canada.

Economic impacts were derived using the Manitoba Bureau of Statistics' Economic Impact Assessment model. Since the report covers gross rather than net measures of benefit, it does not discuss such benefits as the development of skills for Northern peoples as a result of employment and increased business opportunities, or the project's substantial contributions to federal and provincial objectives for reducing greenhouse gas emissions.

WUSKWATIM
Economic Impact Assessment

**Economic Impacts of Building, Operating and Maintaining
the WUSKWATIM Project, 2004 – 2069**

	Employment (Person-years)	Labour Income (Millions \$s)	Taxes (Millions \$s)	GDP (Millions \$s)
CANADA-WIDE TOTAL	9,830	\$454.2	\$186.6	\$639.9
MANITOBA				
Construction – direct	1,835	\$246.6	\$100.2	\$312.8
– indirect	3,035	—	—	—
Operation and Maintenance	828*	\$ 42.0	\$ 16.2	\$ 53.4
TOTALS	5,698	\$288.6	\$116.4	\$366.2
REST OF CANADA				
Construction – direct	369	\$156.6	\$ 66.0	\$255.1
– indirect	3,505	—	—	—
Operation and Maintenance	258	\$ 9.0	\$ 4.2	\$ 18.6
TOTALS	4,132	\$165.6	\$ 70.2	\$273.7
NORTHERN MANITOBA				
Construction – direct	700	\$ 93.8	—	—
– indirect	—	—	—	—
Operation and Maintenance	372	\$ 42.0	—	—
TOTALS	1,072	\$135.8	—	—
NORTHERN MANITOBA ABORIGINAL PEOPLE				
Construction – direct	491	\$ 65.4	—	—
– indirect	—	—	—	—
Operation and Maintenance	120	\$ 13.8	—	—
TOTALS	611	\$ 79.2	—	—

*Person-years of employment during operation and maintenance of the project were calculated by taking the estimate for a typical year and multiplying it by sixty years, the operating life of the project.

ECONOMIC IMPACT ASSESSMENT *of Building, Operating and Maintaining* **WUSKWATIM**

Introduction

This report provides results of an economic impact analysis of the proposed Wuskwatim Generating Station and associated transmission facilities.

Wuskwatim Generating Station is a 200 MW hydro power generating station at Taskinigup Falls in northern Manitoba, at the outlet of Wuskwatim Lake into the Burntwood River. Construction of this \$506 million (in 2002 dollars) facility is expected to begin in late 2003/early 2004 and continue for six years. In 2009, the project will be brought in-service. Operations will last over sixty years.

Associated transmission line and switching station facilities of \$19.87 million (in 2002 dollars) consist of:

- ! new transmission lines from Wuskwatim to Thompson and from Wuskwatim to The Pas
- ! new switching station at the Wuskwatim site.

Construction is projected to begin in late 2003/early 2004 and be complete in 2010.

The new 230 kV Birchtree Station, costing \$21.65 million (in 2002 dollars), located near Thompson is not included in this analysis since its primary role relates to improving system reliability rather than converting Wuskwatim power.

Both construction and operation and maintenance related impact estimates are developed. The much smaller planning phase impacts are not considered. The analysis estimates 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 proposed project, but also the potential spin-off effects generated as a result of purchases of domestic goods and services and the local circulation of increased income.

While economic impact analysis can be a useful component in decision-making, it does have some limitations. Economic impact analysis differs from socioeconomic benefit-cost analysis in that it is a gross rather than net measure of benefit 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.

WUSKWATIM

Economic Impact Assessment

The results of this study should be treated as general estimates and never as absolutes.

Methodology

Economic impacts are derived from the Manitoba Bureau of Statistics' Economic Impact Assessment model. The model requires as input per dollar expenditures on labour and on individual commodities with respect to the project. It further requires locations where each of these commodities will be purchased (i.e., Manitoba or the rest of Canada). As a result, breakdowns of the capital and operating and maintenance expenditures associated with the project are developed. The model is a detailed set of accounts which estimates the amount of every commodity produced and used per dollar of each industry's output. 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 the direct, indirect, and induced impacts of the proposed project on the economy of Manitoba or Canada.

The analysis is based on construction and operation and maintenance cost estimates in place in April 2002. Construction cost estimates for Wuskwatim Generating Station and associated transmission facilities may change as a result of a review of the arrangement of structures for the projects taking place at the time of this analysis. This may lead to changes in the economic impacts presented in this report.

Key economic impacts resulting from the generating station and associated transmission facilities are presented below. 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 (employment, labour income, GDP, and tax revenues) generated for a typical year of operation when the project is at full production.

In addition to beneficial economic impacts for Canadians, this project will also contribute to federal and provincial objectives related to greenhouse gas emissions reductions. Non-polluting hydroelectric power will offset thermal emissions in markets where the power is consumed. In the absence of hydroelectric imports, the utilities buying the power would generally have to resort to coal- or gas-based electricity generation. Other benefits include air quality improvements (SO_x, NO_x, particulates, mercury, etc.), reliability, and diversity of supply.

There will also be benefits in terms of "capacity building" – that is, skills developed for Northern peoples as a result of employment and increased business opportunities.

1. ECONOMIC IMPACT ON MANITOBA AND THE REST OF CANADA

1.1 GENERATING STATION

1.1.1 Construction

Table 1. Generating Station – Construction Expenditures
Direct and Indirect Employment Impact⁽¹⁾ in Person-years
for Manitoba and the Rest of Canada for the Entire Construction Period

Impact	Total Manitoba	Rest of Canada	Total Canada
Direct	1,663 ⁽²⁾	365 ⁽³⁾	2,028
Indirect ⁽⁴⁾	2,485	3,165	5,650
Total Employment Impact	4,148	3,530	7,678

1. Employment impacts are in “person-years.” A person-year is defined as one person being fully employed for one year.
2. On-site direct employment of Manitoba Hydro and contractor employees.
3. Direct employment related to direct suppliers of service (i.e., contractors) from outside Manitoba.
4. Indirect employment refers to the employment of people who supply raw materials, equipment, or services to the initial direct suppliers to the project.

Table 2. Generating Station – Construction Expenditures
Labour Income Impact⁽¹⁾ in Millions of Dollars⁽²⁾
for Manitoba and the Rest of Canada for the Entire Construction Period

Impact	Total Manitoba	Rest of Canada	Total Canada
Labour Income	\$218.6	\$141.6	\$360.2

1. 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.
2. In 2002 dollars.

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Table 3. Generating Station – Construction Expenditures
Tax Revenue Impact⁽¹⁾ in Millions of Dollars⁽²⁾
for Manitoba and the Rest of Canada for the Entire Construction Period

Impact	Total Manitoba	Rest of Canada	Total Canada
Provincial Taxes	\$48.7	\$23.3	\$ 72.0
Local Taxes	\$ 3.2	\$ 6.0	\$ 9.2
Federal Taxes	\$35.8	\$30.7	\$ 66.5
Total Tax Revenue Impact	\$87.7	\$60.0	\$147.7

1. Tax revenue impact estimates are based on year 2001 income tax rates and the 2001 Manitoba Budget.
2. In 2002 dollars.

Table 4. Generating Station – Construction Expenditures
GDP Impact⁽¹⁾ in Millions of Dollars⁽²⁾
for Manitoba and the Rest of Canada for the Entire Construction Period

Impact	Total Manitoba	Rest of Canada	Total Canada
GDP	\$274.0	\$229.6	\$503.6

1. GDP at market price. GDP at market price is the total value of goods and services produced in Canada's economy.
2. In 2002 dollars.

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Economic Impact Assessment

1.1.2 Operation and Maintenance

**Table 5. Generating Station – Operation and Maintenance Expenditures
Direct and Indirect Employment⁽¹⁾ in Person-years
for Manitoba and the Rest of Canada for a Typical Year of Operation**

Impact	Total Manitoba	Rest of Canada	Total Canada
Direct	5.3 ⁽²⁾	0.0 ⁽³⁾	5.3
Indirect ⁽⁴⁾	4.8	2.5	7.3
Total Employment Impact	10.1	2.5	12.6

1. Employment impacts are in “person-years.” A person-year is defined as one person being fully employed for one year.
2. On-site direct employment of Manitoba Hydro and contractor employees.
3. Direct employment related to direct suppliers (i.e., contractors) from outside Manitoba.
4. Indirect employment refers to the employment of people who supply raw materials, equipment, or service to the initial direct suppliers to the project.

**Table 6. Generating Station – Operation and Maintenance Expenditures
Labour Income Impact⁽¹⁾ in Millions of Dollars⁽²⁾
for Manitoba and the Rest of Canada for a Typical Year of Operation**

Impact	Total Manitoba	Rest of Canada	Total Canada
Labour Income	\$0.540	\$0.090	\$0.630

1. 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.
2. In 2002 dollars.

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Economic Impact Assessment

**Table 7. Generating Station – Operation and Maintenance Expenditures
Tax Revenue Impact⁽¹⁾ in Millions of Dollars⁽²⁾
*for Manitoba and the Rest of Canada for a Typical Year of Operation***

Impact	Total Manitoba	Rest of Canada	Total Canada
Provincial Taxes	\$0.08	\$0.02	\$0.10
Local Taxes	\$0.02	\$0.00	\$0.00
Federal Taxes	\$0.09	\$0.03	\$0.12
Total Tax Revenue Impact	\$0.19	\$0.05	\$0.24

1. Tax revenue impact estimates are based on year 2001 income tax rates and the 2001 Manitoba Budget.
2. In 2002 dollars.

**Table 8. Generating Station – Operation and Maintenance Expenditures
GDP Impact⁽¹⁾ in Millions of Dollars⁽²⁾
*for Manitoba and the Rest of Canada for a Typical Year of Operation***

Impact	Total Manitoba	Rest of Canada	Total Canada
GDP	\$0.66	\$0.19	\$0.85

1. GDP at market price. GDP at market price is the total value of goods and services produced in Canada's economy.
2. In 2002 dollars.

1.2 TRANSMISSION LINE

1.2.1 Construction

Table 9. Transmission Line – Construction Expenditures
Direct and Indirect Employment Impact⁽¹⁾ in Person-years
for Manitoba and the Rest of Canada for the Entire Construction Period

Impact	Total Manitoba	Rest of Canada	Total Canada
Direct	160 ⁽²⁾	0 ⁽³⁾	160
Indirect ⁽⁴⁾	304	236	540
Total Employment Impact	464	236	700

1. Employment impacts are in “person-years.” A person-year is defined as one person being fully employed for one year.
2. On-site direct employment of Manitoba Hydro and contractor employees.
3. Direct employment related to direct suppliers (i.e., contractors) from outside Manitoba.
4. Indirect employment refers to the employment of people who supply raw materials, equipment, or service to the initial direct suppliers to the project.

Table 10. Transmission Line – Construction Expenditures
Labour Income⁽¹⁾ in Millions of Dollars⁽²⁾
for Manitoba and the Rest of Canada for the Entire Construction Period

Impact	Total Manitoba	Rest of Canada	Total Canada
Labour Income	\$17.90	\$10.07	\$27.97

1. 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.
2. In 2002 dollars.

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Table 11. Transmission Line – Construction Expenditures
Tax Revenue Impact⁽¹⁾ in Millions of Dollars⁽²⁾
for Manitoba and the Rest of Canada for the Entire Construction Period

Impact	Total Manitoba	Rest of Canada	Total Canada
Provincial Taxes	\$4.94	\$1.62	\$ 6.56
Local Taxes	\$0.50	\$0.42	\$ 0.92
Federal Taxes	\$2.94	\$2.14	\$ 5.08
Total Tax Revenue Impact	\$8.38	\$4.18	\$12.56

1. Tax revenue impact estimates are based on year 2001 income tax rates and the 2001 Manitoba Budget.
2. In 2002 dollars.

Table 12. Transmission Line – Construction Expenditures
GDP Impact⁽¹⁾ in Millions of Dollars⁽²⁾
for Manitoba and the Rest of Canada for the Entire Construction Period

Impact	Total Manitoba	Rest of Canada	Total Canada
GDP	\$24.41	\$17.67	\$42.08

1. GDP at market price. GDP at market price is the total value of goods and services produced in Canada's economy.
2. In 2002 dollars.

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1.2.2 Operation and Maintenance

**Table 13. Transmission Line – Operation and Maintenance Expenditures
Direct and Indirect Employment Impact⁽¹⁾ in Person-years
for Manitoba and the Rest of Canada for a Typical Year of Operation**

Impact	Total Manitoba	Rest of Canada	Total Canada
Direct	0.6 ⁽²⁾	0.0 ⁽³⁾	0.6
Indirect ⁽⁴⁾	2.6	1.7	4.3
Total Employment Impact	3.2	1.7	4.9

1. Employment impacts are in “person-years.” A person-year is defined as one person being fully employed for one year.
2. On-site direct employment of Manitoba Hydro and contractor employees.
3. Direct employment related to direct suppliers (i.e., contractors) from outside Manitoba.
4. Indirect employment refers to the employment of people who supply raw materials, equipment, or service to the initial direct suppliers to the project.

**Table 14. Transmission Line – Operation and Maintenance Expenditures
Labour Income⁽¹⁾ Millions of Dollars⁽²⁾
for Manitoba and the Rest of Canada for a Typical Year of Operation**

Impact	Total Manitoba	Rest of Canada	Total Canada
Labour Income	\$0.13	\$0.05	\$0.18

1. 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.
2. In 2002 dollars.

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**Table 15. Transmission Line – Operation and Maintenance Expenditures
Tax Revenue Impact⁽¹⁾ in Millions of Dollars⁽²⁾
*for Manitoba and the Rest of Canada for a Typical Year of Operation***

Impact	Total Manitoba	Rest of Canada	Total Canada
Provincial Taxes	\$0.03	\$0.01	\$0.04
Local Taxes	\$0.01	\$0.00	\$0.01
Federal Taxes	\$0.02	\$0.01	\$0.03
Total Tax Revenue Impact	\$0.06	\$0.02	\$0.08

1. Tax revenue impact estimates are based on year 2001 income tax rates and the 2001 Manitoba Budget.
2. In 2002 dollars.

**Table 16. Transmission Line – Operation and Maintenance Expenditures
GDP Impact⁽¹⁾ in Millions of Dollars⁽²⁾
*for Manitoba and the Rest of Canada for a Typical Year of Operation***

Impact	Total Manitoba	Rest of Canada	Total Canada
GDP	\$0.19	\$0.11	\$0.30

1. GDP at market price. GDP at market price is the total value of goods and services produced in Canada's economy.
2. In 2002 dollars.

1.3 SWITCHING STATION

1.3.1 Construction

Table 17. Switching Station – Construction Expenditures
Direct and Indirect Employment Impact⁽¹⁾ in Person-years
for Manitoba and the Rest of Canada for the Entire Construction Period

Impact	Total Manitoba	Rest of Canada	Total Canada
Direct	12.2 ⁽²⁾	3.7 ⁽³⁾	15.9
Indirect ⁽⁴⁾	245.8	104.4	350.2
Total Employment Impact	258.0	108.1	366.1

1. Employment impacts are in “person-years.” A person-year is defined as one person being fully employed for one year.
2. On-site direct employment of Manitoba Hydro and contractor employees.
3. Direct employment related to direct suppliers (i.e., contractors) from outside Manitoba.
4. Indirect employment refers to the employment of people who supply raw materials, equipment, or service to the initial direct suppliers to the project.

Table 18. Switching Station – Construction Expenditures
Estimated Labour Income⁽¹⁾ in Millions of Dollars⁽²⁾
for Manitoba and the Rest of Canada for the Entire Construction Period

Impact	Total Manitoba	Rest of Canada	Total Canada
Labour Income	\$10.13	\$4.90	\$15.03

1. 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.
2. In 2002 dollars.

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Table 19. Switching Station – Construction Expenditures
Tax Revenue Impact⁽¹⁾ in Millions of Dollars⁽²⁾
for Manitoba and the Rest of Canada for the Entire Construction Period

Impact	Total Manitoba	Rest of Canada	Total Canada
Provincial Taxes	\$1.95	\$0.71	\$2.66
Local Taxes	\$0.41	\$0.19	\$0.60
Federal Taxes	\$1.78	\$0.94	\$2.72
Total Tax Revenue Impact	\$4.14	\$1.84	\$5.98

1. Tax revenue impact estimates are based on year 2001 income tax rates and the 2001 Manitoba Budget.
2. In 2002 dollars.

Table 20. Switching Station – Construction Expenditures
GDP Impact⁽¹⁾ in Millions of Dollars⁽²⁾
for Manitoba and the Rest of Canada for the Entire Construction Period

Impact	Total Manitoba	Rest of Canada	Total Canada
GDP	\$14.37	\$7.85	\$22.22

1. GDP at market price. GDP at market price is the total value of goods and services produced in Canada's economy.
2. In 2002 dollars.

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1.3.2 Operation and Maintenance

**Table 21. Switching Station – Operation and Maintenance Expenditures
Direct and Indirect Employment Impact⁽¹⁾ in Person-years
for Manitoba and the Rest of Canada for a Typical Year of Operation**

Impact	Total Manitoba	Rest of Canada	Total Canada
Direct	0.3 ⁽²⁾	0.0 ⁽³⁾	0.3
Indirect ⁽⁴⁾	0.2	0.1	0.3
Total Employment Impact	0.5	0.1	0.6

1. Employment impacts are in “person-years.” A person-year is defined as one person being fully employed for one year.
2. On-site direct employment of Manitoba Hydro and contractor employees.
3. Direct employment related to direct suppliers (i.e., contractors) from outside Manitoba.
4. Indirect employment refers to the employment of people who supply raw materials, equipment, or service to the initial direct suppliers to the project.

**Table 22. Switching Station – Operation and Maintenance Expenditures
Estimated Labour Income⁽¹⁾ in Millions of Dollars⁽²⁾
for Manitoba and the Rest of Canada for a Typical Year of Operation**

Impact	Total Canada	Rest of Canada	Total Canada
Labour Income	\$0.03	\$0.01	\$0.04

1. 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.
2. In 2002 dollars.

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Economic Impact Assessment

**Table 23. Switching Station – Operation and Maintenance Expenditures
Tax Revenue Impact⁽¹⁾ in Millions of Dollars⁽²⁾
*for Manitoba and the Rest of Canada for a Typical Year of Operation***

Impact	Total Manitoba	Rest of Canada	Total Canada
Provincial Taxes	\$0.01	\$0.00	\$0.01
Local Taxes	\$0.00	\$0.00	\$0.00
Federal Taxes	\$0.01	\$0.00	\$0.01
Total Tax Revenue Impact	\$0.02	\$0.00	\$0.02

1. Tax revenue impact estimates are based on year 2001 income tax rates and the 2001 Manitoba Budget.
2. In 2002 dollars.

**Table 24. Switching Station – Operation and Maintenance Expenditures
GDP Impact⁽¹⁾ in Millions of Dollars⁽²⁾
*for Manitoba and the Rest of Canada for a Typical Year of Operation***

Impact	Total Manitoba	Rest of Canada	Total Canada
GDP	\$0.04	\$0.01	\$0.05

1. GDP at market price. GDP at market price is the total value of goods and services produced in Canada's economy.
2. In 2002 dollars.

2. ECONOMIC IMPACT ON NORTHERN MANITOBA

Introduction

Northern Manitoba is a large area with three distinct types of communities: “First Nations” communities, “Northern Affairs” communities, and what could be termed “Industrial” communities. Aboriginal people account for 65% of Manitoba’s residents in the Northern Affairs area. In 1996, the First Nations population (those registered under the Indian Act) in Northern Manitoba was 44,500 people, or approximately 54% of the total Northern Manitoba population. The population in First Nations communities is growing rapidly and is made up of young people (over one-third under 15 years of age). Unemployment rates within this population are very high (close to 40% in 1996 versus 8% provincially).

Manitoba Hydro and its First Nations partners are examining various approaches to ensure that a significant number of northern Aboriginal people are employed during the construction and operation phases of the Wuskwatim project. Particular attention is being directed towards the First Nations communities in the vicinity of this project.

This section of the report focuses on the economic impact analysis of the Wuskwatim Generation project and its associated transmission facilities on Northern Manitoba, with specific reference to Northern Aboriginal people. For the purposes of this analysis, the Northern Manitoba boundary is the one contained in the existing Nelson Burntwood Collective Agreement (see map on page ii).

Scope and Approach

The scope of the Northern Manitoba impact analysis of this project has been narrowed to assessing direct employment and labour income impacts, for the following reasons:

- ! Direct employment and labour income are the only variables that can be estimated using available information and existing economic models.
- ! Indirect employment and GDP cannot be estimated because there is no regional input-output model for Northern Manitoba. The provincial input-output model cannot be adapted or used for this purpose. The Manitoba Bureau of Statistics was not able to develop Northern Manitoba multipliers based on information from other comparable regions or from other sources.
- ! Provincial and federal taxes have already been estimated for the project. As a result, it is not meaningful to estimate them for Northern Manitoba. Municipal taxes are not included as the amounts paid in conjunction with the Wuskwatim project will be very small.

WUSKWATIM Economic Impact Assessment

Estimates of direct employment and labour income are provided with respect to:

- ! Northern Manitoba residents, and
- ! Aboriginal residents of Northern Manitoba.

The estimates cover the construction and operations phases of the Wuskwatim generating station and its associated transmission facilities, including the switching station.

Construction Impacts

A range of estimates is presented – low, medium, and high. These estimates are derived from:

- ! The direct construction employment and labour income impact estimates on Manitoba, presented in the previous section of this report (i.e., [Tables 1, 9, and 17](#)).
- ! Northern and Northern aboriginal participation rates for construction employment based on experience during construction of the Limestone Generating Station project and with recent northern transmission and station construction projects. High and low labour participation rates were estimated by drawing on the knowledge of experienced Manitoba Hydro staff, and anticipated corporate policies, initiatives, etc. with respect to aboriginal labour participation.

Operation and Maintenance Impacts

These estimates are derived from:

- ! The total operation and maintenance (on-site) employment and labour income impact estimates on Manitoba presented in the previous section of this report (i.e., [Tables 5, 13, and 21](#)). It is assumed that all direct operation and maintenance (on-site) employment and labour income impacts occur in Northern Manitoba.
- ! Northern Aboriginal participation rates for operation and maintenance employment, based on a corporate target of 33%.

This analysis is intended to provide an indication of the range of direct employment and labour income impacts of the Wuskwatim Generating Station and its associated transmission facilities on residents of Northern Manitoba and Aboriginal residents of Northern Manitoba. Given that this method is untested, we caution that the results are general estimates and never absolutes, and should not be used for reasons other than for those prescribed in the request for this study.

2.1 GENERATING STATION

2.1.1 Construction

**Table 25. Generating Station – Construction Expenditures
Northern Manitoba Direct Employment Impact⁽¹⁾ in Person-years
for Northern Manitoba for the Entire Construction Period**

Impact	Northern Manitoba Residents (BNA) ⁽²⁾	Northern Aboriginal People (BNA) ⁽³⁾
Direct Employment:⁽⁴⁾		
Low	532	316
Medium	649	432
High	732	532

1. Employment impacts are in “person-years.” A person-year is defined as one person being fully employed for one year.
2. Northern Manitoba residents’ impact has been estimated at 32% (low), 39% (medium), and 44% (high) of the total direct Manitoba employment of 1,663 person-years.
3. Northern Manitoba Aboriginal residents’ impact has been estimated at 19% (low), 26% (medium), and 32% (high) of the total direct Manitoba employment of 1,663 person-years.
4. On-site direct employment of Manitoba Hydro and contractor employees.

In addition to the direct employment impact, there will be a significant level of indirect and induced employment impacts on Northern Manitoba from the project’s construction expenditures.

WUSKWATIM
Economic Impact Assessment

Table 26. Generating Station – Construction Expenditures
Northern Manitoba Direct Labour Income Impact⁽¹⁾ in Millions of Dollars⁽²⁾
for Northern Manitoba for the Entire Construction Period

Impact	Northern Manitoba Residents (BNA) ⁽³⁾	Northern Aboriginal People (BNA) ⁽⁴⁾
Labour Income:		
Low	\$70.0	\$41.5
Medium	\$85.3	\$56.8
High	\$96.2	\$70.0

1. 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.
2. In 2002 dollars.
3. Northern Manitoba residents' impact has been estimated at 32% (low), 39% (medium), and 44% (high) of the total direct Manitoba labour income of \$218.6 million.
4. Northern Manitoba Aboriginal residents' impact has been estimated at 19% (low), 26% (medium), and 32% (high) of the total direct Manitoba labour income of \$218.6 million.

2.1.2 Operation and Maintenance

**Table 27. Generating Station – Operation and Maintenance Expenditures
Northern Manitoba Direct Employment Impact⁽¹⁾ in Person-years
for Northern Manitoba for a Typical Year of Operation**

Impact	Northern Manitoba Residents (BNA)⁽²⁾	Northern Aboriginal People (BNA)⁽³⁾
Direct Employment⁽⁴⁾	5.3	1.7

1. Employment impacts are in “person-years.” A person-year is defined as one person being fully employed for one year.
2. Northern Manitoba residents’ impact has been estimated at 100% of the annual direct Manitoba operation and maintenance employment of 5.3 person-years.
3. Northern Manitoba Aboriginal residents’ impact has been estimated at 33% of the annual direct Manitoba operation and maintenance employment of 5.3 person-years.
4. On-site direct employment of Manitoba Hydro and contractor employees.

In addition to the direct employment impact, there will be a significant level of indirect and induced employment impacts on Northern Manitoba from the project’s operating and maintenance expenditures.

WUSKWATIM
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Table 28. Generating Station – Operation and Maintenance Expenditures
Northern Manitoba Direct Labour Income Impact⁽¹⁾ in Millions of Dollars⁽²⁾
for Northern Manitoba for a Typical Year of Operation

Impact	Northern Manitoba Residents (BNA)⁽³⁾	Northern Aboriginal People (BNA)⁽⁴⁾
Labour Income	\$0.54	\$0.18

1. 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.
2. In 2002 dollars.
3. Northern Manitoba residents' impact has been estimated at 100% of the annual direct Manitoba operation and maintenance labour income of \$540,000.
4. Northern Manitoba Aboriginal residents' impact has been estimated at 33% of the annual direct Manitoba operation and maintenance labour income of \$540,000.

2.2 TRANSMISSION LINE

2.2.1 Construction

Table 29. Transmission Line – Construction Expenditures Northern Manitoba Direct Employment Impact⁽¹⁾ in Person-years for Northern Manitoba for the Entire Construction Period

Impact	Northern Manitoba Residents (BNA) ⁽²⁾	Northern Aboriginal People (BNA) ⁽³⁾
Direct Employment:⁽⁴⁾		
Low	58	58
Medium	64	64
High	70	70

1. Employment impacts are in “person-years.” A person-year is defined as one person being fully employed for one year.
2. Northern Manitoba residents’ impact has been estimated at 36% (low), 40% (medium), 44% (high) of the total direct Manitoba employment of 160 person-years.
3. Northern Manitoba Aboriginal residents’ impact has been estimated at 36% (low), 40% (medium), 44% (high) of the total direct Manitoba employment of 160 person-years.
4. On-site direct employment of Manitoba Hydro and contractor employees.

In addition to the direct employment impacts, there will be a significant level of indirect and induced employment impacts on Northern Manitoba from the project’s construction expenditures.

WUSKWATIM
Economic Impact Assessment

Table 30. Transmission Line – Construction Expenditures
Northern Manitoba Direct Labour Income Impact⁽¹⁾ in Millions of Dollars⁽²⁾
for Northern Manitoba for the Entire Construction Period

Impact	Northern Manitoba Residents (BNA)⁽³⁾	Northern Aboriginal People (BNA)⁽⁴⁾
Labour Income:		
Low	\$6.4	\$6.4
Medium	\$7.2	\$7.2
High	\$7.9	\$7.9

1. 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.
2. In 2002 dollars.
3. Northern Manitoba residents' impact has been estimated at 36% (low), 40% (medium), 44% (high) of the total direct Manitoba labour income of \$17.90 million.
4. Northern Manitoba Aboriginal residents' impact has been estimated at 36% (low), 40% (medium), 44% (high) of the total direct Manitoba labour income of \$17.90 million.

2.2.2 Operation and Maintenance

Table 31. Transmission Line – Operation and Maintenance Expenditures Northern Manitoba Direct Employment Impact⁽¹⁾ in Person-years for Northern Manitoba for a Typical Year of Operation

Impact	Northern Manitoba Residents (BNA)⁽²⁾	Northern Aboriginal People (BNA)⁽³⁾
Direct Employment⁽⁴⁾	0.6	0.2

1. Employment impacts are in “person-years.” A person-year is defined as one person being fully employed for one year.
2. Northern Manitoba residents’ impact has been estimated at 100% of the annual Manitoba operation and maintenance employment of 0.6 person-years.
3. Northern Manitoba Aboriginal residents’ impact has been estimated at 33% of the annual Manitoba operation and maintenance employment of 0.6 person-years.
4. On-site direct employment of Manitoba Hydro and contractor employees.

In addition to the direct employment impacts, there will be a significant level of indirect and induced employment impacts on Northern Manitoba from the project’s operating and maintenance expenditures.

WUSKWATIM
Economic Impact Assessment

Table 32. Transmission Line – Operation and Maintenance Expenditures
Northern Manitoba Direct Labour Income Impact⁽¹⁾ in Millions of Dollars⁽²⁾
for Northern Manitoba for a Typical Year of Operation

Impact	Northern Manitoba Residents (BNA)⁽³⁾	Northern Aboriginal People (BNA)⁽⁴⁾
Labour Income	\$0.13	\$0.04

1. 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.
2. In 2002 dollars.
3. Northern Manitoba residents' impact has been estimated at 100% of the annual direct Manitoba operation and maintenance labour income of \$0.13 million.
4. Northern Manitoba Aboriginal residents' impact has been estimated at 33% of the annual direct Manitoba operation and maintenance labour income of \$0.13 million.

2.3 SWITCHING STATION

2.3.1 Construction

**Table 33. Switching Station – Construction Expenditures
Northern Manitoba Direct Employment Impact⁽¹⁾ in Person-years
for Northern Manitoba for the Entire Construction Period**

Impact	Northern Manitoba Residents (BNA) ⁽²⁾	Northern Aboriginal People (BNA) ⁽³⁾
Direct Employment:⁽⁴⁾		
Low	3.7	2.2
Medium	4.5	3.1
High	4.9	3.8

1. Employment impacts are in “person-years.” A person-year is defined as one person being fully employed for one year.
2. Northern Manitoba residents’ impact has been estimated at 30% (low), 37% (medium), 40% (high) of the total direct Manitoba employment of 12.2 person-years.
3. Northern Manitoba Aboriginal residents’ impact has been estimated at 18% (low), 25% (medium), 31% (high) of the total direct Manitoba employment of 12.2 person-years.
4. On-site direct employment of Manitoba Hydro and contractor employees.

In addition to the direct employment impacts, there will be a significant level of indirect and induced employment impacts on Northern Manitoba from the project’s construction expenditures.

WUSKWATIM
Economic Impact Assessment

Table 34. Switching Station – Construction Expenditures
Northern Manitoba Direct Labour Income Impact⁽¹⁾ in Millions of Dollars⁽²⁾
for Northern Manitoba for the Entire Construction Period

Impact	Northern Manitoba Residents (BNA) ⁽³⁾	Northern Aboriginal People (BNA) ⁽⁴⁾
Labour Income:		
Low	\$3.0	\$1.8
Medium	\$3.8	\$2.5
High	\$4.1	\$3.1

1. 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.
2. In 2002 dollars.
3. Northern Manitoba residents' impact has been estimated at 30% (low), 37% (medium), 40% (high) of the total direct Manitoba labour income of \$10.13 million.
4. Northern Manitoba Aboriginal residents' impact has been estimated at 18% (low), 25% (medium), 31% (high) of the total direct Manitoba labour income of \$10.13 million.

In addition to the direct employment impacts, there will be a significant level of indirect and induced employment impacts on Northern Manitoba from the project's construction expenditures.

2.3.2 Operation and Maintenance

**Table 35. Switching Station – Operation and Maintenance Expenditures
Northern Manitoba Direct Employment Impact⁽¹⁾ in Person-years
for Northern Manitoba for a Typical Year of Operation**

Impact	Northern Manitoba Residents (BNA)⁽²⁾	Northern Aboriginal People (BNA)⁽³⁾
Direct Employment⁽⁴⁾	0.3	0.1

1. Employment impacts are in “person-years.” A person-year is defined as one person being fully employed for one year.
2. Northern Manitoba residents’ impact has been estimated at 100% of the annual direct Manitoba operation and maintenance employment of 0.3 person-years.
3. Northern Manitoba Aboriginal residents’ impact has been estimated at 33% of the annual direct Manitoba operation and maintenance employment of 0.3 person-years.
4. On-site direct employment of Manitoba Hydro and contractor employees.

In addition to the direct employment impacts, there will be a significant level of indirect and induced employment impacts on Northern Manitoba from the project’s operating and maintenance expenditures.

WUSKWATIM
Economic Impact Assessment

Table 36. Switching Station – Operation and Maintenance Expenditures
Northern Manitoba Direct Labour Income Impact⁽¹⁾ in Millions of Dollars⁽²⁾
for Northern Manitoba for a Typical Year of Operation

Impact	Northern Manitoba Residents (BNA)⁽³⁾	Northern Aboriginal People (BNA)⁽⁴⁾
Labour Income⁽⁵⁾	\$0.03	\$0.01

1. 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.
2. In 2002 dollars.
3. Northern Manitoba residents' impact has been estimated at 100% of the annual direct Manitoba operation and maintenance labour income of \$0.03 million.
4. Northern Manitoba Aboriginal residents' impact has been estimated at 33% of the annual direct Manitoba operation and maintenance labour income of \$0.03 million.

APPENDIX FIVE

AGREEMENT IN PRINCIPLE

***To guide discussions and arrangements
concerning the Wuskwatim/Notigi Projects and
the Wuskwatim/Notigi Transmission Facilities***



JULY, 2001

AGREEMENT IN PRINCIPLE

JULY, 2001

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AGREEMENT IN PRINCIPLE

BETWEEN:

**NISICHAWAYASIIHK CREE NATION,
(hereinafter called “NCN”)**

OF THE FIRST PART,

- and -

**THE MANITOBA HYDRO-ELECTRIC BOARD,
(hereinafter called “Hydro”)**

OF THE SECOND PART.

WHEREAS:

1. **NCN** is a Cree Nation which carried on, and continues to carry on, activities within its traditional and Treaty 5 areas. **NCN’s** vision statement is: “To exercise sovereignty that sustains a prosperous socio-economic future for the Nisichawayasihk Cree Nation”.
2. There are about 4,500 **Members**, approximately 2,300 of whom live on **Reserve Lands** located at Nelson House, upstream of Taskinigup Falls and Wuskwatim Lake and downstream of the Notigi Control Structure.
3. Neither the **AIP** nor any other arrangements entered into between the **Parties** will alter or amend treaty or aboriginal rights recognized and affirmed by s. 35 of the *Constitution Act*, 1982, including any inherent rights of self government of **NCN** and its **Members**.
4. **Hydro** is a Crown Corporation that was established in 1949, and which is continued by *The Manitoba Hydro Act*, RSM 1987, c. H190, as amended from time to time, for the purposes of providing a continuing supply of power adequate for the needs of the Province of Manitoba; providing and marketing products, services and expertise related to the development, generation, transmission, distribution, supply and end-use of power within and outside of the Province; and marketing and supplying power to persons and other entities outside the Province.

5. In the late 1960's Manitoba and Canada determined that it would be in the Provincial and National interest to expand the planning and development of hydro-electric generating facilities in northern Manitoba. Canada and the Province of Manitoba entered into an agreement dated February 15, 1966, to develop the water power of the Nelson River and associated transmission lines. The 1966 agreement proposed the development of the **CRD** and **LWR**. **NCN** was not a signatory to this 1966 Agreement.
6. The **CRD** could not be built or operated without taking and using **Reserve Lands** and impacting traditional and Treaty 5 lands and resources used by **NCN** and its **Members**.
7. In the early 1970's, Hydro began construction of facilities related to the **CRD** and **LWR** for the purposes of generating hydroelectric power.
8. In 1974 in order to address the potential adverse effects of **CRD** and **LWR**, five Northern Manitoba Cree Nations, including **NCN**, incorporated the Northern Flood Committee ("NFC"). Canada, Manitoba, **Hydro** and the Northern Flood Committee entered into the Northern Flood Agreement ("**NFA**") in December 1977 and it was ratified in March 1978. **NCN** considers the **NFA** to be a treaty. In a statement to the Legislative Assembly of Manitoba by the Honourable Eric Robinson, Minister of Aboriginal and Northern Affairs, on December 15, 2000, the Government of Manitoba recognized the **NFA** as a modern - day treaty.
9. Difficulties arose in relation to the implementation of the **NFA** as there were significant differences among the signatories about the nature and scope of the obligations of Canada, Manitoba and **Hydro**. These problems led to frustration for the parties to the **NFA**.
10. Negotiations started between the NFC, Canada, Manitoba and **Hydro** in the 1980's to try to reach agreement about how to implement the **NFA**. Eventually each of the five Cree Nations which comprised the NFC entered into separate implementation negotiations. **NCN** began negotiations in the fall of 1992 and signed the **1996 Implementation Agreement** in March 1996.
11. In addition to land and financial compensation, the **1996 Implementation Agreement** also included other important provisions, including arrangements for the establishment of a planning process to assess **Future Development** within the **Resource Management Area**.
12. In 1997 **NCN** and **Hydro** established a Future Development Working Group to

begin discussions about potential **Future Development** in accordance with Article 8 of the **1996 Implementation Agreement**. **NCN** and **Hydro** established an Article 8 joint planning process to assess effects of the proposed **Future Developments** on **NCN** and its **Members**, including among other matters, consideration of potential training, employment and business opportunities associated with the **Wuskwatim/Notigi Projects**.

13. In approaching the development of the **Wuskwatim/Notigi Projects**, **Hydro's** Board reviewed its policies, and with the knowledge of its owner, the Province of Manitoba, made a decision to provide **NCN** with an opportunity to acquire a limited equity interest and to participate as a limited partner in the **Project Entity**.
14. This **AIP** is intended to outline the principles which will govern the efforts of the **Parties**:
 - (a) to fulfill their respective obligations to each other under Article 8 of the **1996 Implementation Agreement**; and
 - (b) consistent with the **Hydro** Board's decision outlined in paragraph 13 to explore, and hopefully conclude arrangements for **NCN** to participate as a limited equity partner with **Hydro** in the **Project Entity**.

NOW THEREFORE the **Parties** agree in principle to negotiate the **PDA** and related arrangements in accordance with the following provisions:

1.0 DEFINITIONS

- 1.1 For all purposes within this **AIP**, unless otherwise specifically provided, the following words and phrases, when capitalized and printed in bold type, whether in the plural, the singular or the possessive, shall have the meaning ascribed to them in this Article:

"Adverse Effects" means the direct or indirect, negative consequences of the **Project** or the operation thereof, which consequences impact or change the physical, chemical or biological characteristics of the environment and include, without limitation, risks or injuries to the health, safety, well-being, comfort or enjoyment of **NCN** or **Members**, and impacts on interests in, and the exercise of rights in relation to, lands, pursuits, activities, opportunities, lifestyles and assets of **NCN** or **Members**.

"AIP" means this non-legally binding agreement, which provides a framework for the negotiation of the **Development Arrangement**, the **PDA**, and the **PPA** and

related arrangements.

“**ASL**” means above sea level.

“**A-TEC**” means Atoskiwin Training and Employment Centre, the training and employment referral agency to be established by **NCN** and for purposes of this **AIP** may include **NCN’s** existing Human Resource Development Authority (“HRDA”).

“**BNA**” means the Burntwood Nelson collective agreement between the Allied Hydro Council and the Hydro Projects Management Association and any revisions thereto.

“**Chief and Council**” means the Chief and Councillors elected pursuant to the **NCN** Election Code, 1998 E - 1, as amended from time to time.

“**Community Development Plan**” means **NCN’s** framework for the development, and in particular the resource development of Nelson House and its **Reserve Lands**.

“**Compensation Lands**” means the lands described in Schedule 3.1 of the **1996 Implementation Agreement** the administration and control of which is to be transferred by **Manitoba** to **Canada** and which are to be set apart by Canada as **Reserve Lands**, excluding those lands required for public purposes described in Schedule 3.3 of the **1996 Implementation Agreement** and shall include any replacement **Compensation Lands** selected under Articles 3.5 of the **1996 Implementation Agreement** and shall exclude any lands which cease to be **Compensation Lands** under Article 3.5.5 of the **1996 Implementation Agreement** or Article 3.5.16 of the **1996 Implementation Agreement**.

“**Council Resolution**” means a resolution passed by a quorum of **Chief and Council** at a duly convened regular or special meeting.

“**CRD**” means the Churchill River Diversion project which includes impoundment of the waters of the Churchill River on Southern Indian Lake by the construction of the Missi Control Structure at the outlet of the lake, and the diversion of the impounded waters through South Bay and the Notigi Control Structure, into the Rat/Burntwood River system and the Nelson River. Certain other lakes and rivers are also affected by the **CRD**, including Footprint Lake and the Footprint River.

“**Development Arrangement**” means one or more business arrangements between **NCN** and **Hydro** to be developed for the sole purposes of planning, designing, constructing, owning and operating the **Wuskwatim/Notigi Projects**.

“**Easement Agreement**” means an interest in land to be granted by **NCN** and Canada to **Hydro** and Manitoba.

“**EIA**” means an environmental impact assessment by the relevant regulatory authorities of the environmental effects of a project or development conducted under federal and provincial legislation, including public consultation and review, prior to decisions being made to approve, authorize, grant permission for or licence that project or development.

“**EIS**” means the environmental impact statement or statements, and documentation prepared by the **Proponent** of a project or development, in accordance with requirements under federal and provincial legislation, to inform **Members**, the public and federal and provincial decision-makers about the environmental effects of that project or development.

“**EMT**” means the team of environmental consultants jointly chosen by the **Parties** in 1999 to assist them to undertake the following in relation to the projects or developments described in this **AIP**:

- (a) develop and implement the **Study Plan**;
- (b) develop and implement the studies contemplated in Article 8 of the **1996 Implementation Agreement**;
- (c) prepare documentation for the regulatory process, including documentation for components of the **EIS**;
- (d) develop processes and related materials for consultation with **Members** and others; and
- (e) do other tasks requested by the **Parties**.

“**Existing Development**” means all those physical works related to hydro-electric development on the Churchill, Nelson, Rat, Footprint and Burntwood River Systems and the development of the Lake Winnipeg Regulation System north of the 53rd parallel, to the extent such works have been physically developed and constructed by or on behalf of **Hydro** to March 18, 1996, and, without limiting the generality of the foregoing, includes all dams, dykes, channels, control structures, excavations, generating stations, roads, transmission lines and other works forming part of, or related to, all aspects of such hydro-electric development including

- Lake Winnipeg Regulation,

- Churchill River Diversion, including without limitation the Notigi and Missi control structures,
- Grand Rapids Generating Station,
- Laurie River Generating Station,
- Kelsey Generating Station,
- Kettle Generating Station,
- Long Spruce Generating Station,
- Limestone Generating Station,

and the access road and other physical construction with respect to the proposed Conawapa Generating Station.

“Future Development” means:

- (a) the construction of any portion or parts of the **Project** not physically constructed at March 18, 1996; and
- (b) all major redevelopment or reconstruction of any **Existing Development**;

which has a reasonable likelihood of having a material and continuing physical, chemical or biological impact upon a water body within the **Resource Management Area**.

“Hydro” means The Manitoba Hydro-Electric Board and includes any wholly owned subsidiary.

“Hydro Operations” means the continuing operation and maintenance of the **Integrated Power System**.

“Integrated Power System” means the integrated system of hydraulic and thermal electric generation and power transmission facilities owned and operated by **Hydro**, or in some circumstances, owned by **Hydro** in partnership with others. The **Integrated Power System** is interconnected with other power utilities.

“1996 Implementation Agreement” means the agreement effective March 18, 1996, among **NCN**, Canada, Manitoba and **Hydro** to implement and resolve most of the outstanding obligations under the **NFA** and includes an Amending Agreement dated June 14, 1999, between **NCN**, **Hydro** and Canada in relation to the marina dock.

“Land Use Plan” means the land use plan more particularly described in Article 6.5.4 of the **1996 Implementation Agreement**.

“LWR” means the Lake Winnipeg Regulation project which includes the construction and operation of works and measures to regulate, within certain natural and licenced limits, flows from Lake Winnipeg for hydro-electric generation and mitigation of floods and droughts on Lake Winnipeg.

“Member” means a person who at the relevant time is, or who has applied and is entitled to be, a member of **NCN** pursuant to any Membership Code then lawfully in force and effect.

“NCN” means the Nisichawayasihk Cree Nation formerly known as the Nelson House First Nation.

“NCN Costs” include, but are not limited to, costs of attendance at meetings, costs of advisors, and travel expenses incurred for various meetings, conferences and hearings related thereto, including the negotiations of this **AIP**, the **PDA**, **PPA**, **BNA**, **A-TEC** and other arrangements.

“NFA” means the Northern Flood Agreement, an agreement dated December 16, 1977, between Manitoba, **Hydro**, the Northern Flood Committee, Inc., and Canada, including all schedules annexed thereto, and shall include the Economic Development Agreement between the same parties, dated the 1st day of September, 1977.

“Notigi Project” means the proposed hydro-electric generating station and related works excluding the transmission components but including, without limitation, all dams, dykes, channels, control structures, excavations and roads to be located near the Notigi Control Structure which project, if built, will contribute about 100 megawatts to the **Integrated Power System** through the **Notigi Transmission Facilities**, as more specifically described in Article 5 of this **AIP**.

“Notigi Project Cost Base” means all **Hydro** and **NCN** expenditures and any reimbursements for expenditures attributable to the development of those portions of the **Notigi Project**, that are developed after the date of this **AIP** for the purpose

of generating hydro electric power, as may be agreed between the **Parties**, consistent with Canadian generally accepted accounting principles.

“Notigi Transmission Facilities” means a complex of transmission related facilities within the **Resource Management Area** constructed to incorporate the **Notigi Project** into the **Integrated Power System**, including all transmission lines, switching stations and the construction power line.

“Parties” means **NCN** and **Hydro**.

“PDA” means the Project Development Agreement which will establish detailed arrangements for the **Project Entity** and other related matters, including the matters set out in this **AIP**.

“PPA” means the power purchase agreements and arrangements between **Hydro** and the **Project Entity** consistent with the **PDA** and the **Development Arrangement**.

“Project” means and includes all **Existing Development** and all future hydro-electric development or re-development by **Hydro** on the Churchill, Nelson, Rat, Footprint and Burntwood River Systems and includes all development or re-development by **Hydro** of the Lake Winnipeg Regulation System north of the 53rd (fifty-third) parallel.

“Project Entity” means the form of business structure agreed upon by the **Parties** in the **PDA** and the **Development Arrangement** to own and directly or indirectly plan, design, construct, operate, and maintain the **Wuskwatim Project** and those portions of the **Notigi Project** that are developed after the date of this **AIP** for the purposes of generating hydro-electric power.

“Proponent” means, for purposes of the **EIA** and the **EIS** for the **Wuskwatim Project** or the **Notigi Project**, the **Project Entity** after the **PDA** and the **Development Arrangement** have been concluded, and **Hydro** prior to the **PDA** and/or the **Development Arrangement** being concluded. In the event that the **Parties** agree that an application for regulatory approvals for either the **Wuskwatim Project** or the **Notigi Project** is to be submitted by **Hydro** prior to the **PDA** and/or the **Development Arrangement** being concluded, such application will indicate that it may be amended to show the **Project Entity** as the **Proponent** once the **PDA** and/or the **Development Arrangement** have been concluded. The term **Proponent** when used in relation to the **Wuskwatim/Notigi Transmission Facilities** means **Hydro** on its own behalf, provided however, if

under Article 8.8, **NCN** and/or others acquire an ownership interest in the transmission facilities, the **Proponent** will be the entity selected to act as such by the new ownership group.

“Reserve Lands” means lands within the existing reserves, and also includes all **Compensation Lands** under the **1996 Implementation Agreement**, lands selected, or to be selected under the **TLE Agreement**, or Treaty 5 including any oral promises made in relation to population growth and land disparity, and any other lands which become reserve lands for the use and benefit of **NCN** and its **Members** pursuant to the *Indian Act* (Canada) and any successor legislation.

“Resource Management Area” means the area described and shown on Schedule 6.1 of the **1996 Implementation Agreement** and includes the rivers, lakes and streams, and any **Reserve Lands** therein, subject to any changes that may be made in accordance with Article 6 of the **1996 Implementation Agreement**.

“Resource Management Plan” means resource management plans more particularly described in Article 6.5.2 of the **1996 Implementation Agreement**.

“Resource Management Board” means the Board established pursuant to Article 6 of the **1996 Implementation Agreement**.

“SIL Trapline Zone” means the area shown on Schedule 5.1 of the **1996 Implementation Agreement**.

“Study Group” means representatives of **NCN**, **Hydro** and **EMT** who are responsible for developing and implementing the **Study Plan** and participating in other regulatory related processes as may be required.

“Study Plan” means the **“Notigi and Wuskwatim Generation and Transmission Facilities Joint Study Program revised August 2000”** and any other revisions thereto agreed upon by the **Parties**, which **Study Plan** outlines the terms of reference for environmental studies to be undertaken in relation to the **Wuskwatim/Notigi Projects** to comply with Article 8 of the **1996 Implementation Agreement**, to prepare documentation for inclusion in the **EIS** required for the projects and developments described in this **AIP** and to develop processes and related materials for consultation with **Members** and others.

“TLE Agreement” means the agreement among **NCN**, Manitoba and Canada to implement the land shortfall in the 1908 Adhesion to Treaty 5.

“Work Plans and Budgets” means the annual Work Plans and Budgets developed by **NCN** in relation to:

- (a) the joint planning process, studies and related activities under the **1996 Implementation Agreement**;
- (b) **NCN’s** consideration of the potential opportunity to acquire a limited equity interest and to participate as a partner in the **Project Entity**; and
- (c) other matters agreed to between the **Parties**,

the funding for which has been approved by **Hydro**.

“Wuskwatim/Notigi Adverse Effects” means the negative consequences of the **Wuskwatim/Notigi Projects** and the **Wuskwatim/Notigi Transmission Facilities** on **NCN** and its **Members**, either direct or indirect, which impact or change the physical, chemical or biological quality of the environment of any part of the **Resource Management Area**, and includes, without limitation, risks or injuries to the health, safety, well-being, comfort or enjoyment of **NCN** or its **Members**, and impacts on interests in lands, pursuits, activities, opportunities, lifestyles and assets of **NCN** and its **Members**. Subject to Article 9.1 of this **AIP**, **Wuskwatim/Notigi Adverse Effects** are to be dealt with under the arrangements contemplated in the **AIP** and the **PDA**.

“Wuskwatim/Notigi Projects” means the **Wuskwatim Project** and/or the **Notigi Project**.

“Wuskwatim Project” means the proposed hydro-electric generating station, and related works excluding the transmission components but including, without limitation, all dams, dykes, channels, control structures, excavations, and roads to be located at Taskinigup Falls near Wuskwatim Lake which project, if built, will contribute about 200 megawatts to the **Integrated Power System** through the **Wuskwatim Transmission Facilities**, as more specifically described in Article 4 of this **AIP**.

“Wuskwatim Project Cost Base” means all **Hydro** and **NCN** expenditures and any reimbursement for expenditures, attributable to the development of the **Wuskwatim Project**, as may be agreed between the **Parties**, consistent with Canadian generally accepted accounting principles.

“Wuskwatim Transmission Facilities” means a complex of transmission related facilities within the **Resource Management Area**, constructed to incorporate the

Wuskwatim Project into the **Integrated Power System**, including all transmission lines, switching stations and the construction power line.

“Wuskwatim/Notigi Transmission Facilities” means the **Wuskwatim Transmission Facilities** and/or the **Notigi Transmission Facilities**.

2.0 PURPOSE OF THE AIP

2.1 Since concluding the **1996 Implementation Agreement** the **Parties** have attempted to establish a new relationship based on trust and mutual respect. The **Parties** are:

- (a) undertaking a joint planning process as contemplated by Article 8 of the **1996 Implementation Agreement**;
- (b) discussing the potential opportunity for **NCN** to acquire a limited equity interest and to participate as a limited partner in the **Project Entity**; and
- (c) discussing other issues that by agreement of the **Parties** become part of the process from time to time.

The purpose of the **AIP** is to guide a collaborative planning process established by the **Parties** to conclude a **PDA**, a **PPA**, the **Development Arrangement** and other arrangements in relation to the **Wuskwatim/Notigi Projects**. The **AIP** is also to guide discussions and arrangements concerning the **Wuskwatim/Notigi Transmission Facilities**.

2.2 The **Parties** acknowledge that this **AIP** establishes guidelines for the discussion and negotiation of issues of importance to the **Parties**. This **AIP** will provide an opportunity for the **Parties** to work together to understand and find ways to address:

- (a) **Wuskwatim/Notigi Adverse Effects**; and
- (b) the concerns and aspirations of **Members** in relation to the **Wuskwatim/Notigi Projects** and the **Wuskwatim/Notigi Transmission Facilities**; and

to further develop their new relationship by sharing the potential risks and benefits of the **Wuskwatim/Notigi Projects** on a proportionate basis.

2.3 As part of their ongoing discussions and as relevant to their respective interests,

the **Parties** will endeavour to determine ways in which the **Wuskwatim/Notigi Projects** and the **Wuskwatim/Notigi Transmission Facilities** can be developed at reasonable cost and in a manner which is commercially credible, economically viable, environmentally and socially acceptable, and consistent with the treaty and aboriginal rights of **NCN** and its **Members** and with the principles of sustainable development.

2.4 **Members** have through an opinion survey, identified the following issues as being of importance in relation to **Future Development**:

- (a) More than ninety per cent (90) felt that it was very important to train local residents; to create employment opportunities for local residents; to protect human health and safety; to protect their way of life and culture; to protect important sites; to protect water quality, big game animals and plants; to maintain the beauty of the area; to develop the community; and to create business opportunities for local residents.
- (b) More than eighty per cent (80) felt that it was very important to minimize flooding; to protect fish and furbearing animals; to address navigation and safety; to compensate for damages; to involve the community in hydro-related decisions; and to monitor effects.
- (c) More than seventy per cent (70) felt that it was very important for **NCN** to own part of the project and to improve access for **NCN** to its **Resource Management Area**.
- (d) More than fifty per cent (50) felt that it was very important to restrict the access of non-**Members** to **NCN's** resource areas.

The **Parties** will review and discuss these issues in an effort to fully understand them, and to the extent reasonable and practicable, and within their jurisdiction and authority, will endeavour to address them in the **PDA** or otherwise.

2.5 The **Parties** further acknowledge that while they have attempted in this **AIP** to set out a comprehensive list of the topics that will be discussed throughout the negotiation process leading to the **PDA**, the **PPA**, the **Development Arrangement**, **A-TEC**, the establishment of the **Project Entity** and any other arrangements, it is recognized that new issues may arise and that these issues will, at the request of either **NCN** or **Hydro**, be added to the matters under discussion. The **Parties** further note that they have already identified a number of significant issues which will require their attention as they proceed to finalize the subsequent agreements.

3.0 FUNDAMENTAL PRINCIPLES AND NCN COSTS

3.1 The **Parties** agree that:

- (a) participation in the planning process and the **AIP** does not mean that **NCN** has approved the **Wuskwatim/Notigi Projects** or the **Wuskwatim/Notigi Transmission Facilities**, or that **Hydro** has decided to build them;
- (b) ongoing consultation with **Members** throughout the future development planning and environmental assessment processes is essential to ensure that **Members** are given the opportunity to make informed choices;
- (c) **NCN** will be responsible for and will facilitate community consultation processes with **Members** required pursuant to Article 8 of **1996 Implementation Agreement**;
- (d) **NCN** will also facilitate consultation with **Members** undertaken by the **Proponent** and/or the regulators;
- (e) the provisions of the **NFA**, the **1996 Implementation Agreement** and any other agreements under which either party has binding obligations will be respected and steps will be taken to resolve outstanding issues under these agreements at the earliest opportunity;
- (f) the business and financial arrangements contemplated by this **AIP** will be structured in such a manner that they will not be a disposition of a major facility by **Hydro** as prohibited by section 15.1 of *The Manitoba Hydro Act* and accordingly there will be no disposition of the existing Notigi Control Structure and facilities;
- (g) the **Wuskwatim/Notigi Projects** and the **Wuskwatim/Notigi Transmission Facilities** must be developed consistent with good construction practices, including, except where the **Parties** agree to direct negotiated contracts or restricted tendering, the use of open competitive tendering, in an effort to obtain the most favourable conditions reasonably available for the construction and other development work. If the goods and services in the specifications cannot be obtained for a reasonable price, the potential profitability of the development will not only be reduced but also the **Wuskwatim/Notigi Projects** and the **Wuskwatim/Notigi Transmission Facilities** may also not be economically viable, in which case they would not proceed.

- (h) **Hydro** shall retain a majority ownership interest in the **Wuskwatim/Notigi Projects** and, if under Article 8.8 **NCN** or others acquire an interest in related transmission including the **Wuskwatim/Notigi Transmission Facilities**, **Hydro** shall also retain a majority interest in those transmission facilities;
- (i) the business and financial arrangements pursued will be structured to maintain **Hydro's** tax exempt status;
- (j) the business and financial arrangements pursued will be structured to maintain, to the maximum extent possible, the tax exempt status of **NCN** and its **Members**; and
- (k) protection of the environment will be balanced with all opportunities that may arise from the **Wuskwatim/Notigi Projects** and the **Wuskwatim/Notigi Transmission Facilities**.

3.2 **Hydro** will contribute to **NCN Costs** through approved budgets contained in the annual **Work Plans and Budgets**.

4.0 WUSKWATIM FUTURE DEVELOPMENT

4.1 Wuskwatim Project Description

4.1.1 Article 4 and Schedules 4.3, 4.4 and 4.5 describe the anticipated primary facilities, the secondary structures and the supporting infrastructure forming part of the **Wuskwatim Project**. The anticipated water regime is described in Article 4.4 and the transmission components related to the **Wuskwatim Project** are described in Article 4.5.

4.1.2 The anticipated components of this system facilitate the production of electricity and its transmission to the **Integrated Power System**. The **Parties** acknowledge that the preparation of the description is an ongoing process and that the **Wuskwatim Project** as it is currently known and understood is described in Article 4 and shown in Schedules 4.1 to 4.7.

4.2 Primary Facilities

4.2.1 It is proposed that the **Wuskwatim Project** be located on, and adjacent to, the Burntwood River at Taskinigung Falls, which is located approximately 1.5 km (0.9 miles) downstream of the natural outlet of Wuskwatim Lake at Wuskwatim Falls. The geographical location of the **Wuskwatim Project** is shown on Schedule 4.1.

- 4.2.2 It is anticipated that the **Wuskwatim Project** will consist of the Primary Facilities and several Secondary Structures shown on Schedule 4.2.
- 4.2.3 The Primary Facilities will consist of: Main Dam, Intake/Powerhouse/Service Bay Complex, Non-overflow Gravity Dam, Spillway and Transition Structures, more particularly described in Schedule 4.3.
- 4.2.4 The anticipated Secondary Structures will consist of the North Dyke and the Upstream Channel Improvement Earthworks, and are more particularly described in Schedule 4.4.
- 4.2.5 The system of Primary Facilities and Secondary Structures collectively will maintain upstream water levels within a designated range and the Intake/Powerhouse/Service Bay Complex will regulate the river flows to produce electricity.

4.3 Supporting Infrastructure

- 4.3.1 Various supporting infrastructure is required during the project schedule, some of which will become permanent works. The supporting infrastructure is described in Schedule 4.5 and will include, but is not limited to, the following:

- Pilot Road;
- Construction Power Services;
- Initial Construction Camp and Work Areas;
- Access Road;
- Main Construction Camp;
- Work Areas;
- Service Roads;
- Stage I - Cofferdam;
- Stage II - Upstream Cofferdam;
- Access Road;
- Stores Area; and
- Borrow Areas.

- 4.3.2 The routing and location of the access road and the main construction camp will, subject to the ultimate decision and approval of the relevant regulatory authorities be determined following all necessary consultation.

4.4 Water Regime

- 4.4.1 The construction and operation of the **Wuskwatim Project** will result in changes in the Water Levels, Flows, Water Level Fluctuations and Flow Fluctuations from

those currently experienced at some locations along the Burntwood River between Early Morning Rapids and the outlet of Birch Tree Lake as shown in Schedule 4.1. The nature and extent of the anticipated changes are described in the following sections.

4.4.2 Operation of the **CRD**

The primary purpose of the **CRD** is to divert water from the Churchill River to the Nelson River to supply the generating stations on the lower Nelson River. Natural inflows to the Rat and Burntwood River system combine with the **CRD** regulated flows to move downstream along the Burntwood River towards Wuskwatim Lake and further downstream toward Split Lake. It is anticipated that the typical seasonal and monthly regulation pattern that has been experienced historically since the **CRD** was fully commissioned in September of 1977 will remain unaltered. Therefore, it is also anticipated by the **Parties** that the constraints imposed by the **CRD** 1973 Interim Water Licence, the Augmented Flow Program, the 1976 City of Thompson Agreement, the **NFA**, and the **1996 Implementation Agreement** will continue unaffected by the **Wuskwatim Project**.

4.4.3 Datum

The datum in this **AIP** is consistent with the controlling benchmarks defined in the **1996 Implementation Agreement** as more specifically referred to in Schedule 4.6.

4.4.4 Water Levels

Water levels along the Rat and Burntwood Rivers for the existing conditions from the Notigi Control Structure to the City of Thompson are shown in Schedule 4.7. The estimated open water levels for the proposed developed condition for the same route are also shown in Schedule 4.7.

4.4.5 Upstream of Wuskwatim Lake

It is anticipated that the **CRD** will continue to be operated as outlined in Article 4.4.2. The water regime along the Rat and Burntwood Rivers between the Notigi Control Structure and Early Morning Rapids will be unchanged by the **Wuskwatim Project**. Therefore, the water regime described by Article 2 of the **1996 Implementation Agreement** will be unaffected by the **Wuskwatim Project**.

4.4.6 Wuskwatim Lake

The **Wuskwatim Project** will normally be operated such that the water level on Wuskwatim Lake will be at or slightly below 234.0 metres (767.7 feet) **ASL** excluding wind and wave effects. For short term emergency purposes, the water level may drop to as low as 233.0 metres (764.4 feet) **ASL**. The water levels in the immediate forebay area, which is the area between Wuskwatim Falls and the Primary Facilities at Taskinigup Falls, will be approximately 0.10 metres (4 inches) lower than the water levels on Wuskwatim Lake.

In the event of unusual flood flows, the level of Wuskwatim Lake will be anticipated to rise above the normal operating level. For the flood flow with probability of occurrence of 1% per year, the water level of Wuskwatim Lake will be anticipated to rise to approximately 234.8 metres (770.3 feet) **ASL**.

The water level fluctuations on Wuskwatim Lake and the immediate forebay will depend on the operation of the **Wuskwatim Project**. The monthly and seasonal water level fluctuations presently experienced will be eliminated. The operation of the **Wuskwatim Project** will depend primarily on the river flows, the requirements of the **Integrated Power System** and the plant maintenance schedule. The **Wuskwatim Project** will be operated such that the water levels on Wuskwatim Lake will be relatively stable with typical daily water level fluctuations, excluding wind and wave effects, of less than 0.05 metres (2 inches). The maximum daily water level fluctuation under open water conditions is estimated to be less than 0.10 metres (4 inches).

4.4.7 Downstream of the **Wuskwatim Project**

Water levels immediately downstream of the **Wuskwatim Project** will depend on the operation of the **Wuskwatim Project** and the operation of the **CRD**.

Seasonal and monthly fluctuations of water levels and flows along the Burntwood River downstream of the **Wuskwatim Project** will be unchanged by the operation of the **Wuskwatim Project** and will continue to result from the operation of the **CRD** and the natural inflows to the Burntwood River.

Superimposed upon the seasonal and monthly variations, daily fluctuations, excluding wind and wave effects, of water levels and flows will result from the operation of the **Wuskwatim Project**. The magnitudes of the fluctuations will decrease with distance downstream of the **Wuskwatim Project**. In the powerhouse tailrace area, the anticipated daily water level fluctuations are estimated to be typically around 1.1 metres (3.6 feet), ranging up to a maximum of approximately 1.4 metres (4.6 feet). Opegano Lake will experience daily water level fluctuations anticipated to be typically around 0.1 metres (4 inches), ranging

up to a maximum of approximately 0.5 metres (1.6 feet). Birch Tree Lake will experience daily water level fluctuations to a maximum of approximately 0.1 metres (4 inches).

4.4.8 Ice Conditions

(i) Upstream of Wuskwatim Lake

Winter ice conditions experienced upstream of Early Morning Rapids are variable. It is anticipated that winter ice conditions upstream of Early Morning Rapids will be unchanged by the **Wuskwatim Project**.

(ii) Wuskwatim Lake

Under existing conditions resulting from the operation of the **CRD**, Wuskwatim Lake develops a winter ice cover. Operation of the **Wuskwatim Project** is anticipated to result in no change in ice conditions on Wuskwatim Lake.

(iii) Downstream of Wuskwatim Lake

Winter ice conditions currently experienced downstream of the **Wuskwatim Project** are variable. With operation of the **Wuskwatim Project**, areas that currently remain open during the winter season are anticipated to continue to remain open, and areas where an ice cover currently forms are anticipated to continue to form an ice cover.

(iv) Winter hydraulic studies including monitoring of ice processes are ongoing as part of the planning studies for the **Wuskwatim Project** and as part of **CRD** monitoring studies.

4.4.9 Flooded Lands and Clearing

The **Wuskwatim Project** operation is anticipated to cause no new flooding of shoreline lands between the Notigi Control Structure and Wuskwatim Falls. The total area of land to be flooded by the **Wuskwatim Project** is estimated to be less than 0.5 square kilometres (less than 0.2 square miles or about 125 acres), as shown in Schedule 4.2. The land to be flooded by the **Wuskwatim Project** will be cleared.

Downstream of the **Wuskwatim Project**, it is anticipated that no lands and shoreline will require clearing or shoreline protection measures other than as

referred to in Article 10.7(a).

4.4.10 Severance Line

A severance line has been established around Wuskwatim Lake and other water bodies affected by the **CRD** as required by *The Water Power Act* (Manitoba). The severance lines will be reviewed as a result of the **Wuskwatim Project**. The line is determined by applying engineering principles to the geotechnical qualities of the shoreline.

Based on current available information, the **Parties** acknowledge that adjustments may be necessary to previously established severance lines.

4.5 Wuskwatim Transmission Facilities

4.5.1 Initial construction power will be provided at the **Wuskwatim Project** through the operation of a diesel generator for initial construction camp set-up. Construction power will be provided through construction of a permanent transmission line from the future Thompson Birchtree Station to a construction power station located near the generating station site.

4.5.2 It is anticipated that permanent transmission lines, switching stations and associated facilities will be constructed inside and outside the **Resource Management Area** to incorporate the **Wuskwatim Project** into the **Integrated Power System**.

4.5.3 The proposed routing and location of the transmission lines will, subject to the ultimate decision and approval of the relevant regulatory authorities, be determined following all necessary consultation with **Members** and others.

5.0 NOTIGI FUTURE DEVELOPMENT

5.1 Notigi Project Description

5.1.1 Article 5 and Schedules 5.3, 5.4 and 5.5 describe the anticipated Primary Facilities, the existing Principal and Secondary Structures, and the Supporting Infrastructure forming part of the **Notigi Project**, the existing Notigi Control Structure and related works. The anticipated water regime is described in Article 5.4 and the transmission components related to the **Notigi Project** are described in Article 5.5.

5.1.2 The anticipated components of this system facilitate the production of electricity

and its transmission to the **Integrated Power System**. The **Parties** acknowledge that the preparation of the description is an ongoing process and that the **Notigi Project** as it is currently known and understood is described in Article 5 and Schedules 5.1 to 5.7.

5.2 Primary Facilities

- 5.2.1 It is proposed that the **Notigi Project** be located near the existing Notigi Control Structure which is on Provincial Road 391, approximately 36 kilometres (22 miles) west of the Nelson House road intersection. The geographical location of the **Notigi Project** is shown in Schedule 5.1.
- 5.2.2 It is anticipated that the **Notigi Project** will consist of several components, the primary component being the new Primary Facilities as shown in Schedule 5.2. The new Primary Facilities will consist of the Intake/Powerhouse/Service Bay Complex, South Transition Structure and South Tie-In Wall as described in Schedule 5.3.
- 5.2.3 Several existing Principal and Secondary Structures make up the Notigi Control Structure and related works. The existing Principal and Secondary Structures are shown in Schedule 5.2 and are described in Schedule 5.4.
- 5.2.4 The system of new Primary Facilities and the existing Principal and Secondary Structures collectively will maintain upstream water levels within the existing range. The Intake/Powerhouse/Service Bay Complex will regulate the river flows to produce electricity without materially changing the operation of the **CRD**, and will also continue to regulate the **CRD**.

5.3 Supporting Infrastructure

Various supporting infrastructure is required during the project schedule, some of which will become permanent works. The supporting infrastructure is shown in Schedule 5.2 and is described in Schedule 5.5, and will include, but is not limited to, the following:

- Construction Power Services;
- Initial Construction Camp and Work Area;
- Main Construction Camp;
- Work Areas;
- Borrow Areas;
- Service Roads;
- Provincial Road 391 Diversion and Realignment;

- Upstream Cofferdam; and
- Stores Area.

5.4 Water Regime

5.4.1 The construction and operation of the **Notigi Project** will result in changes in the Water Levels, Flows, Water Level Fluctuations and Flow Fluctuations from those currently experienced at some locations along the waterway between South Bay Channel and Early Morning Rapids as shown in Schedule 5.1. The nature and extent of the anticipated changes are described in the following sections.

5.4.2 Operation of the **Churchill River Diversion (CRD)**

The Notigi Control Structure provides part of the regulation capability for the operation of the **CRD**, as more particularly described in Article 4.4.2. The proposed **Notigi Project** will combine the existing **CRD** regulation function provided by the Notigi Control Structure with electricity generation capability. It is anticipated that an additional licence may be required to define the operation of the **Notigi Project** as a hydroelectric generating station.

5.4.3 Datum

The datum in this **AIP** is consistent with the controlling benchmarks defined in the **1996 Implementation Agreement**, as more specifically referred to in Schedule 5.6.

5.4.4 Water Levels

Water levels along the Rat and Burntwood Rivers for the existing conditions from South Bay Channel to Early Morning Rapids are shown in Schedule 5.7. Estimated open water levels for the proposed developed condition for the same route are also shown in Schedule 5.7.

5.4.5 Upstream of the **Notigi Project**

The **Notigi Project** will be capable of operating within the full range of water levels currently experienced on Notigi Lake. It is anticipated that the **CRD** will continue to be operated as outlined in Article 5.4.2 and the seasonal and monthly fluctuations of water levels and flows upstream of the **Notigi Project** from South Bay Channel to Notigi Lake will be unchanged by the operation of the **Notigi Project**.

Superimposed upon the seasonal and monthly fluctuations, daily fluctuations of

water levels and flows, excluding wind and wave effects, will result from the operation of the **Notigi Project**. The operation of **Notigi Project** will depend upon the diversion flows, the requirements of the **Integrated Power System** and the plant maintenance schedule. The **Notigi Project** will be operated such that the levels on Notigi Lake will experience typical daily water level fluctuations of less than 0.03 metres (1 inch). The maximum water level fluctuation under open water conditions is estimated to be less than 0.05 metres (2 inches).

5.4.6 Downstream of the **Notigi Project**

Seasonal and monthly fluctuations of water levels and flows along the Rat, Footprint and Burntwood Rivers downstream of the **Notigi Project** will be unchanged by the operation of the **Notigi Project** as outlined in Article 5.4.2.

Superimposed upon the seasonal and monthly fluctuations, daily fluctuations of water levels and flows, excluding wind and wave effects, will result from the operation of the **Notigi Project**. The magnitudes of the fluctuations will decrease with distance downstream of the **Notigi Project**. In the powerhouse tailrace area, the anticipated typical daily water level fluctuations will be approximately 0.4 metres (1.3 feet), ranging up to a maximum of approximately 0.7 metres (2.3 feet). Wapisu Lake is anticipated to experience typical daily water level fluctuations of approximately 0.15 metres (0.5 feet), ranging up to a maximum of approximately 0.2 metres (0.7 feet). Threepoint Lake and Footprint Lake are anticipated to experience typical daily water level fluctuations to a maximum of approximately 0.05 metres (2 inches).

Therefore, it is anticipated that the water regime described in Article 2 of the **1996 Implementation Agreement** will be unaffected by the **Notigi Project**.

5.4.7 Ice Conditions

(i) Upstream of the **Notigi Project**

Winter ice conditions currently experienced upstream of the **Notigi Project** are variable. It is anticipated that winter ice conditions upstream of the **Notigi Project** will be unchanged by the **Notigi Project**.

(ii) Downstream of the **Notigi Project**

Under existing conditions resulting from the operation of the **CRD**, open water conditions persist throughout the year along the Rat River between the Notigi Control Structure and Wapisu Lake. Operation of the **Notigi Project**

is anticipated to result in no change in ice conditions along this portion of the Rat River.

Winter ice conditions currently experienced in Wapisi Lake and downstream along the Rat, Footprint and Burntwood Rivers are variable. With operation of the **Notigi Project**, areas that currently remain open during the winter season are anticipated to continue to remain open, and areas where an ice cover currently forms are anticipated to continue to form an ice cover.

- (iii) Winter hydraulic studies including monitoring of ice processes are ongoing as part of the planning studies for the **Notigi Project** and as part of **CRD** monitoring studies.

5.4.8 Flooded Lands and Clearing

Operation of the **Notigi Project** is anticipated to cause no new flooding of lands upstream or downstream of the **Notigi Project**. It is anticipated that no shoreline clearing or shoreline protection measures will be required other than as referred to in Article 10.7(a).

5.4.9 Severance Line

A severance line has been established along the shoreline of Notigi Lake and any water bodies affected by the **CRD** as required by *The Water Power Act* (Manitoba). The severance line will be reviewed as a result of the **Notigi Project**. The line is determined by applying engineering principles to the geotechnical qualities of the shoreline.

Based on current available information, the **Parties** acknowledge that adjustments may be necessary to previously established severance lines.

5.5 Notigi Transmission Facilities

5.5.1 Initial construction power will be provided at the **Notigi Project** through connection with the existing electrical services available in the area. Construction power will be provided from a new substation tapping into the existing 138 kV transmission line from the Thompson Mystery Lake Station to the Laurie River Station.

5.5.2 It is anticipated that permanent transmission lines, switching stations and associated facilities will be constructed inside and outside the **Resource Management Area** to incorporate the **Notigi Project** into the **Integrated Power**

System.

- 5.5.3 The proposed routing and location of the transmission lines will, subject to the ultimate decision and approval of the relevant regulatory authorities, be determined following all necessary consultation with **Members** and others.

6.0 TRAINING, EMPLOYMENT AND BUSINESS OPPORTUNITIES

6.1 Hydro Operations

6.1.1 The **Parties** agree to work together in an effort to increase opportunities for **Members** to be employed in **Hydro Operations**.

6.1.2 To facilitate employment for **Members** in **Hydro Operations**, **Hydro** and **NCN** will:

- (a) consult to identify potential positions for which **Members** may be qualified or wish to obtain training in order to qualify for such positions;
- (b) consult to identify other reasonable and practical means for **Members** to be employed in **Hydro Operations**, including the establishment of annual estimates of permanent, temporary and seasonal employment opportunities; and
- (c) undertake a study of existing job qualification standards, related to **Hydro Operations**, for the purposes of:
 - (i) determining if the standards are appropriate for the job description and recommending any changes which are warranted; and
 - (ii) assessing the number, description and qualification standards of jobs in **Hydro Operations**.

The **Parties** agree that no job qualification standard that is reasonable to require of applicants for, or employees filling, any job in **Hydro Operations**, should be reduced to accommodate the employment of **Members** except in accordance with any obligation imposed on **Hydro** pursuant to legislation or by any legislative body having jurisdiction over **Hydro** in such matters.

6.1.3 As contemplated in Article 8.3.6 of the **1996 Implementation Agreement**, **Hydro** shall retain its discretion to adopt, amend or terminate its on-the-job employment and business opportunities policies.

6.2 Wuskwatim/Notigi Projects Construction

6.2.1 In considering the potential for training and employment opportunities for **NCN** and its **Members** in the **Wuskwatim/Notigi Projects** and the **Wuskwatim/Notigi Transmission Facilities**, the **Parties** recognize that the majority of such training

and employment opportunities will be with third party contractors and sub-contractors and that project tender documents and, where relevant, collective agreements will establish the arrangements under which **Members** will be employed.

6.2.2 The **Parties** will seek practicable ways for **NCN** and its **Members** to participate in the **Wuskwatim/Notigi Projects** and the **Wuskwatim/Notigi Transmission Facilities**. To the extent reasonably practicable, the **Parties** will co-operate to:

- (a) consult with potential contractors and sub-contractors about relevant issues;
- (b) analyse the scope and scheduling of all potential work on, and opportunities arising from, the **Wuskwatim/Notigi Projects** and the **Wuskwatim/Notigi Transmission Facilities** in a timely fashion;
- (c) analyse existing and past employment and procurement policies and implementation processes and job qualification standards used in previous hydro-electric development such as Limestone, to determine which policies, processes, and job qualification standards were effective, which were not and the reasons therefor and based on this analysis jointly recommend to the appropriate organizations and/or authorities, appropriate policies, procedures and job qualification standards to meet the fundamental principles set out in Article 3;
- (d) develop surveys and other planning instruments to assess the readiness of **NCN** businesses and **Members** to access opportunities arising from the **Wuskwatim/Notigi Projects** and the **Wuskwatim/Notigi Transmission Facilities** and keep such information current throughout the various phases of the **Wuskwatim/Notigi Projects** and the **Wuskwatim/Notigi Transmission Facilities**;
- (e) assess the skills and competencies that will be necessary for **NCN** and its **Members** to participate in the **Wuskwatim/Notigi Projects** and the **Wuskwatim/Notigi Transmission Facilities** and how the existing skills of **Members** can be transferred and/or utilized in relation to the proposed work requirements; and
- (f) determine at the earliest reasonable time, the academic and other pre-requisites necessary for **Members** to obtain the relevant qualifications to access business and employment opportunities and consult about training programs which **NCN**, **A-TEC** or others may establish for **Members** to obtain such qualifications in a timely manner.

- 6.2.3 The **Parties** recognize that their efforts to estimate potential job requirements and scheduling under Article 6.2.2 will necessarily be subject to error, even with the involvement of contractors and sub-contractors, and that the degree of error will increase the further the estimates are made from the final contract documents going for tender and bids being received. Ultimately the contractors and sub-contractors, subject to the requirements of any collective agreements and the tender documents, will be responsible for determining the number of jobs available, the job qualifications, and the scheduling of those jobs.
- 6.2.4 The **Parties** will review any collective agreement relevant to the **Wuskwatim/Notigi Projects**, and specifically, the provisions relating to employment preferences, recruitment, referral, placement and on-the-job training, and will seek appropriate ways in which preferential arrangements designed to foster and encourage the employment of **Members** in the **Wuskwatim/Notigi Projects** can be incorporated.
- 6.2.5 The **Parties** intend, if reasonably possible, that the **Wuskwatim/Notigi Projects** will proceed with a collective agreement in place to protect the **Wuskwatim/Notigi Projects** by means of a “no strike, no lock out” clause. In negotiating any new collective agreements, the **Parties** will endeavour to secure the measures referred to in Article 6.2.4.
- 6.2.6 The **Parties** will jointly develop proposals for the revision of the **BNA**, and **Hydro** will keep **NCN** fully informed about collective agreement negotiations related to the **Wuskwatim/Notigi Projects**, but **Hydro** will retain final authority over negotiating and concluding any such collective agreement.
- 6.2.7 The **Parties** acknowledge **Members** may require special training about labour laws, unions, collective agreements and the obligations of parties to such agreements. The **Parties** will consider appropriate arrangements to ensure that such training is obtained in a timely manner.
- 6.2.8 As the **Wuskwatim/Notigi Transmission Facilities** will connect with similar facilities outside the **Resource Management Area** the **Parties** recognize that other communities may have employment opportunity interests which should be treated in a fair and equitable manner. The **Parties** acknowledge that the same crew may be required to work both within and outside the **Resource Management Area**. Therefore, the **Parties** will discuss how the employment opportunity interests of **NCN** and others can be addressed in a fair and representative manner.
- 6.3 **Business Opportunities**

- 6.3.1 The **Parties** intend to use open competitive tendering for **Wuskwatim/Notigi Projects** and the **Wuskwatim/Notigi Transmission Facilities** contracts, except where the **Parties** agree to use negotiated contracts or restricted tendering. In the **PDA**, the **Parties** will identify the **Wuskwatim/Notigi Projects** contracts which will be negotiated or subject to restricted tendering and the terms and conditions that will be included in those processes to facilitate the achievement of the principles in this **AIP**. **Hydro** in consultation with **NCN** and other affected communities will identify the **Wuskwatim/Notigi Transmission Facilities** contracts, which will be negotiated or subject to restricted tendering and the terms and conditions that will be included in those processes.
- 6.3.2 Contractors retained to work on the **Wuskwatim/Notigi Projects** and the **Wuskwatim/Notigi Transmission Facilities** must be qualified and capable of completing the agreed upon work in accordance with the standards established by **Hydro**, or, in relation to the **Wuskwatim/Notigi Projects** after the **Project Entity** has been established, the **Project Entity**. However, the **Parties** may consider scoping of contracts and/or waiving bid and performance bond requirements in relation to certain contracts to facilitate the participation of **NCN** businesses in the **Wuskwatim/Notigi Projects** and subject to Article 6.2.8, the **Wuskwatim/Notigi Transmission Facilities**.
- 6.3.3 The **Parties** will also make the appropriate arrangements for **NCN** businesses to understand their obligations pursuant to any collective agreements and for **NCN** to be able to participate on a basis proportionate to its equity position, in the Hydro Projects Management Association if it determines such participation is important to **NCN**. **Hydro** will retain its voting control of the Hydro Projects Management Association, consistent with its equity ownership position.

6.4 Training, Employment and Business Opportunities - General

- 6.4.1 **Hydro** will either directly or indirectly, through the **Project Entity** or another appropriate agency agreed upon between the **Parties**, provide the following to facilitate the employment of **Members** in **Hydro Operations** and with the **Wuskwatim/Notigi Projects**:
- (a) resources reasonably required for aboriginal employment support;
 - (b) cross cultural support work shops for employees;
 - (c) counselling support for aboriginal and other employees; and
 - (d) programs to facilitate the resolution of problems and conflicts involving

aboriginal employees, other employees and/or contractors.

- 6.4.2 Following the signing of the **AIP**, **NCN** will undertake the development of an accredited curriculum that encompasses the academic upgrading required to enable any interested **Member** to meet post-secondary admission standards. This curriculum will be tailored to draw on the actual experience of **Members** in the **Resource Management Area**, integrating math, science and English requirements. **Hydro** will co-operate with **NCN** in this undertaking and may provide funding and other agreed upon resources, which arrangements shall be set out in a separate agreement between the **Parties**.
- 6.4.3 The **Parties** will co-operate in an effort to identify training programs and multi-year funding for training programs offered by Canada, Manitoba, educational institutions, the construction industry and others, and to facilitate the tasks to be undertaken by **A-TEC**.
- 6.4.4 In establishing employment and business preferences consistent with the principles set out in this **AIP**, it is necessary to consider all legal and constitutional requirements, including, without limitation:
- (a) ongoing obligations of **Hydro** under the **NFA** and the **1996 Implementation Agreement**;
 - (b) contractual obligations of either **NCN** or **Hydro** to third parties;
 - (c) applicable human rights legislation;
 - (d) applicable labour and employment legislation, including successor rights of labour unions;
 - (e) provisions of any relevant collective agreements to which **Hydro** is a party; and
 - (f) laws related to the tendering process.

7.0 ATOSKIWIN TRAINING AND EMPLOYMENT CENTRE

- 7.1 **NCN** wants to maximize training, employment and business opportunities for its **Members** that may arise from the **Wuskwatim/Notigi Projects** and the **Wuskwatim/Notigi Transmission Facilities**, and **Hydro** will, to the extent reasonably practicable, explore arrangements to facilitate this objective.

- 7.2 **A-TEC** may be the institution responsible for the educational upgrading and skills training of **Members** and others. **NCN**, through **A-TEC** or other institutions, may arrange for **Members** and, where appropriate, others to be trained in a timely fashion.
- 7.3 **A-TEC** will be the referral agency for **Members** with respect to employment on the **Wuskwatim/Notigi Projects** and will refer job-qualified, or for apprenticeship positions, apprentice eligible, **Members** who are ready and willing to fill vacancies and new positions as they become available.
- 7.4 The responsibilities of **Hydro** in relation to **A-TEC** are restricted to providing the funding and assistance specifically agreed upon. **Hydro** makes no undertaking or warranty as to the effectiveness of the training provided by **A-TEC**.
- 7.5 Following approval of the **AIP**, it is anticipated the **Parties** will negotiate an agreement for **Hydro** to make a financial contribution to **A-TEC** activities in an amount to be agreed upon. The agreement will address:
- (a) the use of such contribution;
 - (b) the terms under which the contribution will be credited against or repaid by **NCN**;
 - (c) the sources of repayment or credit, which may include any of the following:
 - (i) future net income due to **NCN** from the **PDA**, **PPA** or other arrangements;
 - (ii) compensation that may become due to **NCN** as the result of **Wuskwatim/Notigi Adverse Effects**; or
 - (iii) other sources; and
 - (d) agreement on the nature and extent of program monitoring and evaluation.
- 7.6 The contribution will not oblige **Hydro** to participate in future programs or involve any commitments related to the **Wuskwatim/Notigi Projects** unless specifically agreed upon by the **Parties** in the **PDA** or other arrangements.
- 7.7 The **Parties** may discuss the funding requirements of **A-TEC** in future years and following these discussions, **Hydro** may provide further funding to **A-TEC** under further separate arrangements which may be negotiated and agreed upon.

8.0 DEVELOPMENT ARRANGEMENT

- 8.1 The **Parties** will negotiate in good faith with a view to entering into a **Development Arrangement**, which will achieve the objectives set out in this **AIP**.
- 8.2 The receipt of income by the **Project Entity** and **Hydro** from the **Wuskwatim/Notigi Projects** will be structured to be exempt from income tax. The receipt of income by **NCN** and its **Members** from the **Wuskwatim/Notigi Projects** will be structured to be exempt from income tax to the extent that it is reasonably and legally possible.
- 8.3 The development of the **Wuskwatim/Notigi Projects** will be accomplished by means of a contract between **Hydro** and the **Project Entity**. Subject to the **PDA** and related arrangements, **Hydro** shall maintain its discretion pursuant to Article 8.3.6 of the **1996 Implementation Agreement**.
- 8.4 **Hydro**, as the majority owner of the **Project Entity**, must protect certainty of decision making and its control to safeguard construction schedules, operating requirements and its investment in the projects and the **Integrated Power System**. **Hydro** recognizes that **NCN's** interest in the **Project Entity** will also need to be protected.
- 8.5 Any **Development Arrangement** will be based on a sharing of risks and benefits in proportion to the relative ownership interests of the **Parties**. **Hydro**, as the majority owner of the **Project Entity**, will, subject to Federal and Provincial regulatory authority, have ultimate control over and be responsible for planning, designing, constructing, operating and maintaining the **Wuskwatim/Notigi Projects**.
- 8.6 **NCN** will have, at its option, the right to acquire an ownership interest in the **Project Entity**, or if a separate **Project Entity** is used for each project or development, an ownership interest in each **Project Entity**, which ownership interest will be not less than 25% in each **Project Entity**. The **Parties** will consider increasing this amount.
- 8.7 The **Development Arrangement** will not prohibit the participation of other parties in the ownership of the **Wuskwatim/Notigi Projects**, provided such participation is acceptable to the **Parties**.
- 8.8 **Hydro** is considering the feasibility of **NCN** and others acquiring ownership interests in transmission facilities related to the **Wuskwatim/Notigi Projects**. **NCN** is also considering whether it wishes to pursue equity participation in

- transmission. The **Parties** will discuss these issues further.
- 8.9 There will be appropriate provisions and restrictions relating to the **Parties'** respective rights to deal with their respective investment interests in the **Wuskwatim/Notigi Projects**, or once the **Project Entity** is established, the **Project Entity**.
- 8.10 The **Development Arrangement** will be governed by, and comply with, all laws in force and effect in the Province of Manitoba.
- 8.11 The **Parties** will be responsible for arranging the financing of their equity participation and will review options available for financing the **Wuskwatim/Notigi Projects** by the **Project Entity**. The **Parties** will discuss how the **Wuskwatim/Notigi Projects** are to be financed. The **Development Arrangement** will permit the borrowing by the **Parties** of money and the pledging of their respective investment interests, if necessary, to finance part of their respective interests in the **Wuskwatim/Notigi Projects'**.
- 8.12 Either **Party's** decision to participate or not to participate financially will depend upon the ability of the **Wuskwatim/Notigi Projects** to provide a longer term cash flow sufficient to cover reasonable debt servicing requirements and a reasonable return on investment. Before and after the signing of the **PDA, Hydro** and **NCN** will each independently assess their potential risks and rewards in relation to the **Wuskwatim/Notigi Projects** but such independent assessment may include jointly retaining an independent consultant to carry out a financial assessment in accordance with jointly developed terms of reference.
- 8.13 The **Development Arrangement** will clarify the respective liabilities of each owner.
- 8.14 It is intended that the power generated for the **Wuskwatim/Notigi Projects** will be bought by **Hydro** pursuant to a **PPA** with the **Project Entity**.
- 8.15 As part of their due diligence in their assessment of the viability of the **Wuskwatim/Notigi Projects**, and the **Wuskwatim/Notigi Transmission Facilities** the **Parties** will consider the terms and conditions of all existing licences and permits that may impact upon or be affected by the **Wuskwatim/Notigi Projects** and the **Wuskwatim/Notigi Transmission Facilities**.
- 8.16 The **Parties** will discuss and agree upon the attribution of benefits from **Existing Development** to the **Wuskwatim/Notigi Projects** and the appropriate cost base adjustments, if any.

9.0 ADVERSE EFFECTS

- 9.1 The **Parties** acknowledge that Article 6 of the **NFA** was not resolved by the **1996 Implementation Agreement** and remains outstanding. Both **Parties** recognize that it is important for each to resolve their respective issues and claims with Canada in relation to Article 6 as soon as possible. The **Parties** further acknowledge and expressly agree that neither **Party** shall be required as a consequence of this Article to take any action or refrain from any action which in its sole determination may prejudice or detract from any legal rights, obligations or negotiating positions of that **Party**.
- 9.2 The relationship between ongoing liability for **Adverse Effects** under the **1996 Implementation Agreement** and the arrangements for **Wuskwatim/Notigi Adverse Effects** will be addressed in the **PDA**.
- 9.3 The **Wuskwatim Project** will result in flooding of less than 0.5 square kilometres (less than 0.2 square miles or about 125 acres) of land located in the **Resource Management Area** immediately upstream of the Primary Facilities described in Article 4, between Taskinigup Falls and Wuskwatim Falls. The **Wuskwatim Project** will alter the water regime between Early Morning Rapids and the City of Thompson and may cause **Wuskwatim/Notigi Adverse Effects**.
- 9.4 The **Notigi Project** is not anticipated to result in any new flooding of land located in the **Resource Management Area**. It is anticipated that the **Notigi Project** will alter the water regime along the Rat River in the immediate vicinity of the Notigi Control Structure and downstream to Wapisu Lake and may cause **Wuskwatim/Notigi Adverse Effects**.
- 9.5 The **Parties** will identify and resolve all potential **Wuskwatim/Notigi Adverse Effects** which are not offset by benefits from the **Wuskwatim/Notigi Projects** for **NCN** and its **Members**. Where **Wuskwatim/Notigi Adverse Effects** have been identified and they cannot reasonably be prevented, minimized or mitigated, just and reasonable compensation for such **Wuskwatim/Notigi Adverse Effects** shall be determined in accordance with the **1996 Implementation Agreement**. Where works or measures, including mitigatory works or measures, cause unforeseen **Wuskwatim/Notigi Adverse Effects**, they shall, where reasonably practicable, be remedied, mitigated, or where it is not reasonably practicable to remedy or mitigate such **Wuskwatim/Notigi Adverse Effects**, they shall be compensated in accordance with the **1996 Implementation Agreement**.

- 9.6 The **Wuskwatim/Notigi Projects** and the **Wuskwatim/Notigi Transmission Facilities** will be designed to avoid or minimize environmental impacts to the extent reasonably practicable. It is understood that in accordance with Article 8 of the **1996 Implementation Agreement**, the final design decisions are the responsibility of **Hydro**, subject to the **Development Arrangement**.
- 9.7 Subject to the **PDA**, the **Development Arrangement** or any other arrangements, **Hydro**, on behalf of the **Project Entity**, or the **Project Entity**, will be responsible for paying compensation for **Wuskwatim/Notigi Adverse Effects** related to the **Wuskwatim/Notigi Projects**. It is understood that compensation for the **Wuskwatim/Notigi Adverse Effects** related to the **Wuskwatim/Notigi Projects** will form part of the **Wuskwatim Project Cost Base** or the **Notigi Project Cost Base**, whichever is applicable.
- 9.8 The owner of the related transmission facilities will be responsible for paying compensation for **Wuskwatim/Notigi Adverse Effects** arising from such related transmission facilities.
- 9.9 The **PDA** will specify other remedial and/or mitigatory works and measures, which the **Parties** may agree are to be undertaken. These will be subject to any required Federal or Provincial regulatory approvals.
- 9.10 The **PDA** will specify the total amount of compensation, determined in accordance with Articles 9.5 to 9.8, that will be paid to **NCN** on behalf of itself and **Members** in relation to the anticipated **Wuskwatim/Notigi Adverse Effects**. A schedule for payments of such compensation will be agreed upon and set forth in the **PDA**, and may include:
- (a) preliminary payments against the agreed compensation for anticipated **Wuskwatim/Notigi Adverse Effects** at any time that may be agreed upon prior to a commitment by the **Parties** to proceed with the **Wuskwatim/Notigi Projects** or the **Wuskwatim/Notigi Transmission Facilities**;
 - (b) the balance of the compensation for **Wuskwatim/Notigi Adverse Effects** only after the **Parties** have received all required licences and federal and provincial regulatory approvals and have committed to proceed with the **Wuskwatim/Notigi Projects** or the **Wuskwatim/Notigi Transmission Facilities**, but before commencing the construction of any permanent dams or generating facilities constituting part of the **Wuskwatim/Notigi Projects**; and

- (c) such additional compensation as may be necessary at any time in the future to address **Wuskwatim/Notigi Adverse Effects** which were unknown or unforeseen and not discernable or foreseeable with the exercise of due diligence prior to the actual construction and operation of the **Wuskwatim/Notigi Projects** or the **Wuskwatim/Notigi Transmission Facilities**.
- 9.11 Monies paid to **NCN** in relation to **Wuskwatim/Notigi Adverse Effects** may be paid to **NCN** directly, to a trust held by **NCN** on behalf of **NCN** and **Members**, or pursuant to such other arrangements agreed upon by the **Parties**, and may be used by **NCN** to fund its potential equity participation in the **Wuskwatim/Notigi Projects** and subject to Article 8.8, the **Wuskwatim/Notigi Transmission Facilities** .
- 9.12 The **Parties** will discuss the appropriate releases and indemnities to be provided by **NCN**, with respect to anticipated **Wuskwatim/Notigi Adverse Effects** that will be identified in the **PDA** or other arrangements.
- 9.13 The **Parties** shall consider and make any amendments necessary to the predetermined compensation in Schedule 2.2 of the **1996 Implementation Agreement** as required by Article 8 thereof.
- 9.14 **NCN** will have the first right of refusal to acquire, under terms agreed to by the **Parties**, any assets of the **Project Entity**, which **Hydro** or the **Project Entity** has the right and intention to dispose of or to sell at the end of construction. The **Parties** will discuss extending the right of first refusal beyond the end of construction. Such assets of the **Wuskwatim/Notigi Projects** may include but are not limited to any buildings, equipment and supplies that **Hydro** or the **Project Entity** determines are no longer required for their purposes. This right of first refusal does not apply to a bulk sale of such assets if such bulk sale would be contrary to applicable legislation, or, a disposition by **Hydro** of its interest in the **Wuskwatim/Notigi Projects** or in the **Project Entity** unless the prior written approval of **Hydro's** owner and/or the relevant regulatory authorities are obtained. The environmental licences and permits will outline the regulatory requirements imposed on the **Proponent**, and the **PDA** may outline the responsibilities of the **Parties**, for cleaning up and restoring areas used in relation to the **Wuskwatim/Notigi Projects** and the **Wuskwatim/Notigi Transmission Facilities**.
- 9.15 **NCN** has advised that the following socio-cultural issues are of fundamental importance to **NCN** and its **Members**:
- (a) identification and protection of sites and objects in need of preservation,

such as the Footprints, Dancing Circles, Wesakechak's chair, vision quest sites, stone people's boat, grave sites, previous campsites and other settlement sites, Manitou Island, artifacts, and medicinal herbs and plants;

- (b) social impacts of the **Wuskwatim/Notigi Projects** on language, heritage and culture, including oral history, ceremonies and traditions; and
- (c) the importance of archeological, anthropological and cultural issues to the environmental assessment.

NCN shall assist **Hydro** and **EMT** in the identification of the sites in Article 9.14(a) as soon as is reasonably practicable following the signing of this **AIP**. The **Parties** agree to review these issues and endeavour to find measures to address them.

10.0 LAND, RESOURCE AND NAVIGATION ISSUES

- 10.1 **NCN** has expedited its selection of certain parcels of land pursuant to the **TLE Agreement**, which lands may be affected by the **Wuskwatim/Notigi Projects**. **NCN** wishes to expedite the approval process in relation to these lands. **Hydro** agrees to meet with **NCN** no later than thirty (30) days following the signing of the **AIP** to discuss whether **Hydro** will facilitate these requests.
- 10.2 In accordance with Article 8 of the **1996 Implementation Agreement** the **Parties** will consider whether an **Easement Agreement** will be required for the storage of water, transmission lines, and other infrastructure as a result of the **Wuskwatim/Notigi Projects**.
- 10.3 The **Parties** will also consider the **TLE Agreement** land selections that may impact on the **Wuskwatim/Notigi Projects** and the **Wuskwatim/Notigi Transmission Facilities**, including where applicable riparian rights and ownership of streams and lake beds in relation to such selections, and address them in the **PDA** as required. **Hydro** acknowledges that under the **TLE Agreement** **NCN** has selected potential borrow sites for the provision of granular materials to the **Wuskwatim Project**. The **Parties** will outline the terms and conditions for providing granular materials from this site in the **PDA**.
- 10.4 The **Parties** acknowledge that it may be necessary at appropriate times to involve representatives of Canada and Manitoba in the negotiations related to the **PDA**, **PPA**, the establishment of **A-TEC** and other matters and that separate agreements may be necessary with Canada and Manitoba to facilitate the provisions in this **AIP**.
- 10.5 A **Community Development Plan** was prepared for **NCN** in 1983. **NCN** wishes

to update the existing plan to determine how the proposed **Wuskwatim/Notigi Projects** and the **Wuskwatim/Notigi Transmission Facilities** will impact on Nelson House and its planning needs.

- 10.6 Article 6 of the **1996 Implementation Agreement** anticipates that **NCN** and Manitoba will develop a **Resource Management Plan** and a **Land Use Plan** through the **Resource Management Board**. The **Parties** acknowledge these plans will assist **NCN** in deciding whether to proceed with the **Wuskwatim/Notigi Projects**. **NCN** will refer the **Wuskwatim/Notigi Projects** and the **Wuskwatim/Notigi Transmission Facilities** within the **Resource Management Area** to the **Resource Management Board** for recommendations in accordance with Article 6.6.9 of the **1996 Implementation Agreement**.
- 10.7 **Hydro** acknowledges that navigation of the lakes, rivers and streams impacted by **Existing Development** continues to be of concern to **NCN** and its **Members**. The **Parties** will seek solutions to these concerns by:
- (a) continuing to implement annual shoreline and debris management programs as may be agreed upon, to clean up targeted areas;
 - (b) reviewing the safety measures in the **1996 Implementation Agreement** to determine whether such measures will need to be expanded due to the **Wuskwatim/Notigi Projects**, or whether changes are required to existing programs, as contemplated by Articles 2.7.4 and 2.7.6 of the **1996 Implementation Agreement** and with respect to these Articles the **Parties** waive the one year notice and time limits for the review.
 - (c) examining debris, ice conditions and other impacts of the **Wuskwatim/Notigi Projects** which may affect navigation and how such impacts can be avoided or minimized.

11.0 REGULATORY MATTERS

- 11.1 The **Parties** have a mutual interest in the environmental assessment of the proposed projects or developments described in this **AIP**, and acknowledge that the development of an **EIS** for any of the proposed projects or developments by the **Proponent** will proceed in a manner consistent with all legal and technical requirements of the Federal and Provincial regulatory review and approval processes.
- 11.2 **NCN's** role in the development of the **EIS** documentation for the **Wuskwatim/Notigi Projects** will depend on its interests in those projects. It is

- anticipated that, as a potential equity investor in the **Project Entity**, **NCN** will continue to be involved in clarifying the information and procedural needs of the regulators in relation to those projects.
- 11.3 The **Parties** jointly chose the **EMT** and established the **Study Group** to undertake the **Study Plan** to develop:
- (a) the studies required under Article 8 of the **1996 Implementation Agreement**; and
 - (b) documentation for inclusion in any **EIS** required for projects and developments described in this **AIP**.
- 11.4 Both **NCN** and **Hydro** have an interest in any **EIA** undertaken in relation to any projects or developments described in this **AIP**. The **Parties** acknowledge that **NCN's** interests may vary depending upon whether it is an equity participant in the **Wuskwatim/Notigi Projects**, and the **Wuskwatim/Notigi Transmission Facilities** or both. As a potential equity investor in either the **Wuskwatim/Notigi Projects** or the **Wuskwatim/Notigi Transmission Facilities**, **NCN** will have an interest in the outcome of the **EIA** for the transmission facilities that will be required to connect the **Wuskwatim/Notigi Projects** to the **Integrated Power System**.
- 11.5 In the absence of equity participation the **EIA** related to the projects and developments described in this **AIP** will still be of interest to **NCN** as a potentially impacted First Nation. While **NCN's** role in the regulatory process will vary depending upon whether it is an equity participant in the **Wuskwatim/Notigi Project** and the **Wuskwatim/Notigi Transmission Facilities**, the information generated by the **Study Group** will contribute to the development of an **EIS** for each of the **Wuskwatim/Notigi Projects** and the related transmission facilities including the **Wuskwatim/Notigi Transmission Facilities**.
- 11.6 The **Proponent**, in consultation with the **Parties**, Federal and Provincial regulatory authorities, **EMT** and others, will develop a public involvement plan which will provide for consultation with all interested persons and groups during the development of the **EIS** and other processes forming part of the **EIA** for the projects and developments described in this **AIP**.
- 11.7 In the event that **NCN** is not an equity participant in the **Wuskwatim/Notigi Projects** or the **Wuskwatim/Notigi Transmission Facilities**, the **Proponent** in consultation with Federal and Provincial regulatory authorities and others, will develop a specific consultation plan for **NCN** and its **Members**, as required by their

interests in those projects and developments.

- 11.8 In all cases, consultation with **NCN** and its **Members** will focus on their interests within the **Resource Management Area**, the **SIL Trapline Zone** and **NCN's** traditional and Treaty 5 lands.
- 11.9 All public consultation processes and their results will be documented for the purpose of demonstrating fulfilment of all regulatory and other legal obligations by **Hydro**, **NCN** and/or the **Proponent**. These consultation processes will be documented in the **EIS**.
- 11.10 Subject to any confidentiality arrangements, the **Parties** will share with each other and the **Proponent** all relevant information in their possession or control necessary to complete the **EIS** for any project or development described in this **AIP**. The **Parties** will cooperate with the **Proponent** in the collection of the additional information required to allow the Federal and Provincial regulatory authorities to complete the **EIA**, with the objective of facilitating a coordinated, consistent and timely review process for any project or development described in this **AIP**.
- 11.11 The **Parties** recognize that cumulative effects assessment will be required for purposes of the **EIA** and that such effects will be addressed in the **EIS** for any project or development described in this **AIP**.
- 11.12 The **Parties** will consider how the information in the **Community Development Plan**, the **Resource Management Plan** and the **Land Use Plan** can be used to facilitate the **EIA** for any project or development described in this **AIP**.

12.0 CONFLICT OF INTEREST

- 12.1 If **NCN** or its **Members** or **Hydro** or any of its affiliates or subsidiaries decide to bid for any contract work, or if the **Parties** decide to joint venture with any other party and bid for contract work related to the **Wuskwatim/Notigi Projects**, arrangements will be considered to identify and address conflicts of interest. The **PDA**, **PPA** and any other agreements will identify and establish measures to avoid the concerns that would otherwise arise from potential conflicts of interests.

13.0 AIP APPROVAL AND IMPLEMENTATION

- 13.1 Before signing the **AIP**, **NCN** will hold at least one (1) public meeting of **Members** in each of Nelson House, Thompson, Brandon, South Indian Lake, and Winnipeg,

- following reasonable notice, to review and explain the terms of the **AIP**. **NCN** will approve the **AIP** by holding a secret ballot vote of all **Members** eighteen (18) years of age and over consistent with the procedures in the **NCN** Election Code, 1988, E1, except that **Members** shall be provided with polls for voting at the Duncan Wood Memorial Hall in Nelson House, Murdo Clee Hall in South Indian Lake, The Hub in Thompson, Friendship Centre (205 College Avenue) in Brandon and Place Louis Riel in Winnipeg, and by travelling poll for elders and disabled **Members** in Nelson House.
- 13.2 If a majority of those **Members** voting approve the **AIP**, **Chief and Council** will pass a **Council Resolution** approving the **AIP** and authorizing it to sign the **AIP** on behalf of **NCN**.
- 13.3 Before **NCN** holds the referendum referred to in Article 13.1, this **AIP**, will be presented to the members of the Board of **Hydro**, and the Minister responsible for **Hydro** for consideration and approval.
- 13.4 Throughout the course of negotiations, and following completion of a **PDA**, **Chief and Council** will convene such meetings of **Members** as may be reasonably required, and with its advisors will explain the nature and significance of the **PDA** and other arrangements.
- 13.5 When the **PDA** has been approved by **Hydro**, **Chief and Council** will submit the **PDA** to **Members** for approval in a manner that is consistent with the **AIP** ratification procedures outlined in Article 13.1. Following approval by **Members**, the **PDA** will be formally approved by **Chief and Council** by **Council Resolution**, by the Board of **Hydro**, and by the appropriate authorities for the Province of Manitoba and signed by the **Parties**.

14.0 PUBLIC INFORMATION AND CONFIDENTIALITY

- 14.1 As the **Parties** hope to enter into the **Development Arrangement**, the **PDA**, **PPA**, and other arrangements, they will be sharing confidential information. They have agreed to be bound by confidentiality agreements and requirements in relation to the sharing of such information.
- 14.2 The **Parties** agree, to the extent possible, to coordinate with each other all public information and media communications concerning all matters addressed in this **AIP**.

14.3 Information of a confidential or proprietary nature will be dealt with under the provisions of confidentiality agreements exchanged between the **Parties**.

15.0 TREATY AND ABORIGINAL RIGHTS

15.1 Nothing in this **AIP** or any other arrangements or agreements contemplated in this **AIP** is intended to alter aboriginal or treaty rights recognized and affirmed under section 35 of the *Constitution Act*, 1982.

15.2 Nothing in this **AIP** or other arrangements or agreements contemplated in this **AIP** is intended to relieve Canada, Manitoba or **Hydro** of any continuing obligations under the **NFA**, the **1996 Implementation Agreement**, or the **TLE Agreement**.

15.3 Nothing in this **AIP** or any other arrangements or agreements contemplated in this **AIP** is intended to constitute authorization for the taking or using of **Reserve Lands** without the consent of **NCN** and its **Members** for purposes of s. 35 of the *Indian Act*, (Canada).

16.0 GENERAL

16.1 Nothing in this **AIP** shall constitute a precedent for interpreting the rights and obligations of either **Party** in relation to Article 8 or any other Article of the **1996 Implementation Agreement**. This **AIP** is without prejudice to the position of any **Party** with respect to the **1996 Implementation Agreement**.

16.2 No portion of any monies payable by **Hydro** to **NCN** under this **AIP** or the arrangements contemplated herein in relation to **NCN Costs**, **Wuskwatim/Notigi Adverse Effects** or the **PDA** will be used to pay contingency fees or bonuses. For greater certainty, no **Member**, including a member of **Chief and Council**, no advisor and no legal counsel will be entitled to a contingency fee or bonus.

16.3 Where there is any inconsistency between metric and imperial measurements, the **Parties** agree that Article 15.2.3 of the **1996 Implementation Agreement** shall apply.

16.4 As reasonably required by the **Parties** to protect their respective interests in the **Wuskwatim/Notigi Projects**, arrangements will be put in place to ensure that the **Parties** have all necessary direct or indirect access to relevant **Wuskwatim/Notigi Projects** development information, including as required direct or indirect access to potential contractors, engineers and related construction entities.

17.0 ACKNOWLEDGEMENTS

17.1 **NCN** acknowledges that it has received all necessary independent technical and legal advice in respect of the negotiation and completion of this **AIP**. **Hydro** has not intentionally withheld any information from **NCN**, which **Hydro** believed was relevant to the issues being addressed in the **AIP**. **Hydro** confirms that it has provided to **NCN** all information which **Hydro** considered would be relevant and material to **NCN** in its consideration of the issues addressed in this **AIP**.

18.0 TERM OF AIP

18.1 Unless extended in writing by the **Parties** this **AIP** will lapse upon the earlier of:

- (a) the signing of the **PDA**; or
- (b) sixty (60) days following the date either **NCN** or **Hydro** provides the other with written notice of termination.

18.2 In the event of termination of this **AIP**, the **Parties** will discuss an orderly conclusion to the future development activities underway at that time so that legal obligations to employees and others will be met in a timely fashion.

19.0 VALIDITY

19.1 Nothing in the **AIP** or any other arrangements or agreements described in this **AIP** is intended to alter or limit the jurisdiction and rights of **NCN**, Canada or Manitoba pertaining to matters dealt with in this **AIP**.

IN WITNESS WHEREOF the **PARTIES** have executed this **AIP** on the _____ day
of _____, 2001

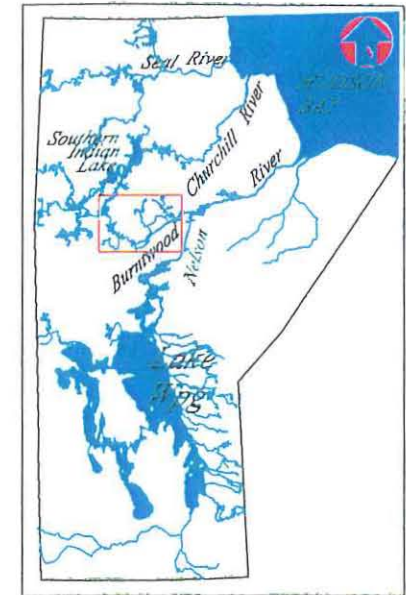
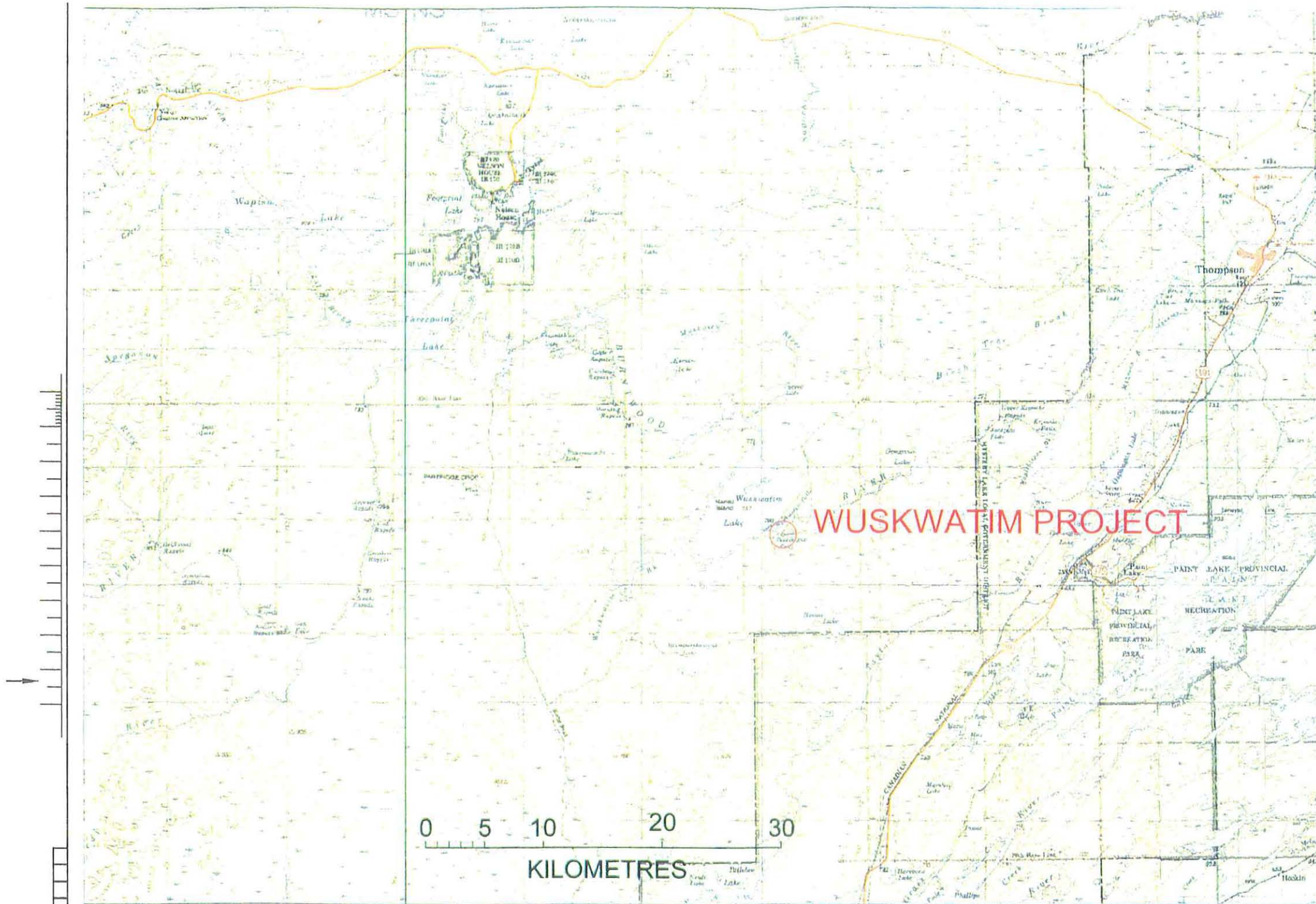
NISICHAWAYASIIHK CREE NATION

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THE MANITOBA HYDRO-ELECTRIC BOARD

WITNESS

**SCHEDULE 4.1
WUSKWATIM PROJECT
REGIONAL LOCATION PLAN**



KEYMAP

WUSKWATIM PROJECT



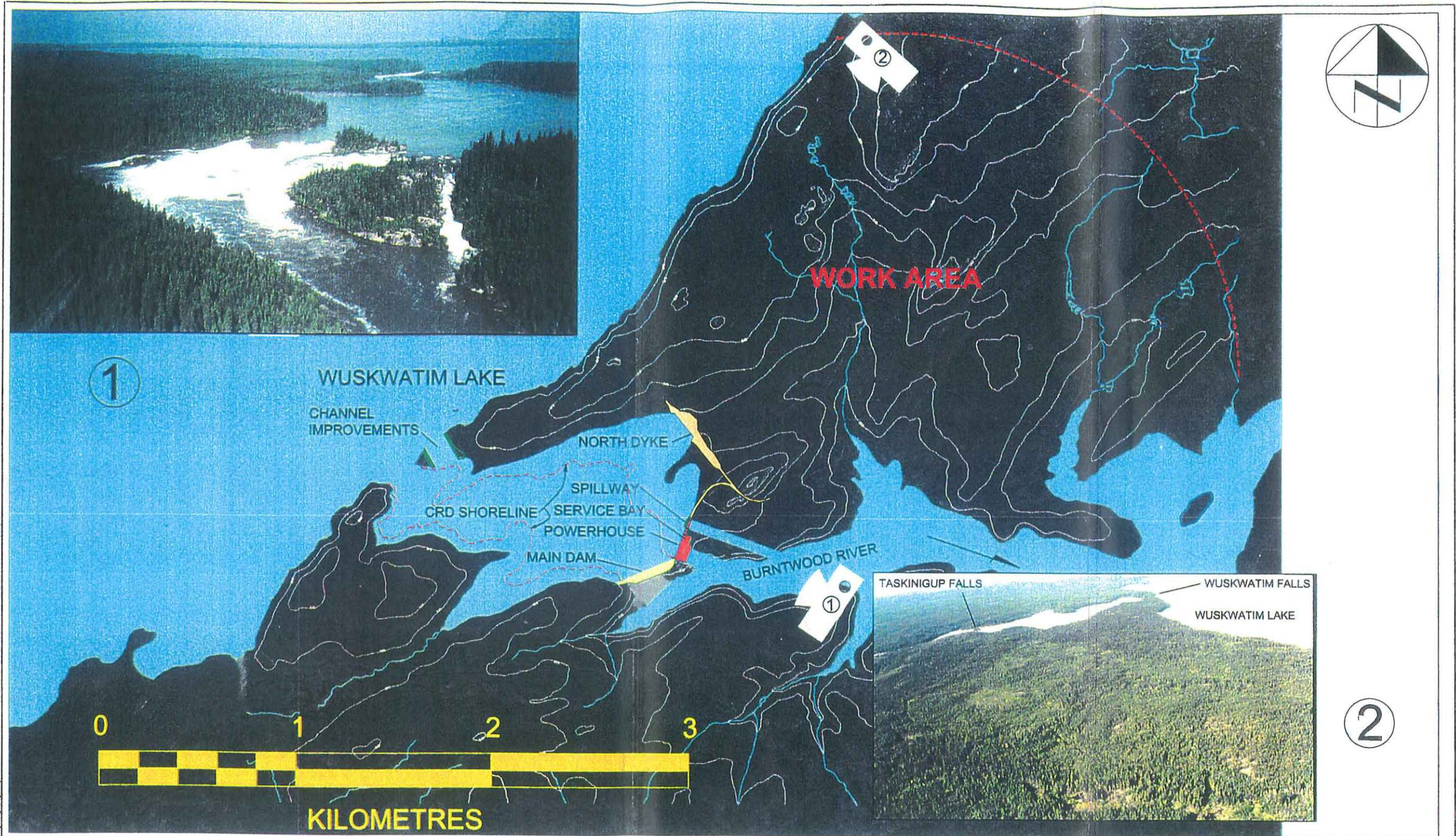
FOR MICROFILM USE ONLY

AUTOCAD ORIGINAL

MANITOBA HYDRO POWER SUPPLY - POWER PLANNING & OPERATIONS	
WUSKWATIM GENERATING STATION	
WUSKWATIM PROJECT REGIONAL LOCATION PLAN	
DRAWN DGM CHECK GNC SCALE AS SHOWN DATE 01 01 09	00184-10010-0012_00 SHT. 01 REV. 00

NO.	DATE	REVISIONS	BY	CKD.	APP.

**SCHEDULE 4.2
WUSKWATIM PROJECT
GENERAL ARRANGEMENT**



FOR MICROFILM USE ONLY

AUTOCAD ORIGINAL

MANITOBA HYDRO POWER SUPPLY - POWER PLANNING & OPERATIONS			
WUSKWATIM GENERATING STATION			
WUSKWATIM PROJECT GENERAL ARRANGEMENT			
DRAWN DGM CHECK GNC SCALE AS SHOWN DATE 01 01 09	00184-10010-0013_00	SHT. 01	REV. 00

NO.	DATE	REVISIONS	BY	CKD.	APP.

SCHEDULE 4.3

DESCRIPTION OF THE PRIMARY FACILITIES

Main Dam

The Main Dam will be an earthwork structure that will be located in the main channel of the Burntwood River at the upstream end of Taskinigup Falls. The Main Dam will be constructed from earth and rock-fill materials obtained from the local area. The purpose of the Main Dam as part of the system of Principal and Secondary Structures will be to maintain upstream water levels within a designated range.

There will be a road on top of the structure to allow access across the structure.

Intake/Powerhouse/Service Bay Complex

The Intake/Powerhouse/Service Bay complex will be a reinforced concrete and steel structure that will be located on the north side of the Burntwood River, immediately northeast of Taskinigup Falls. The complex will be northeast of the Main Dam and will be connected to the Spillway by a non-overflow concrete gravity dam.

The complex will contain three vertical-shaft, fixed blade propeller-type turbines and vertical umbrella-type generators. Each unit will have three water intake passages constructed of reinforced concrete that will be close-coupled to the powerhouse reinforced concrete semi-spiral conduit. The conduit will direct the river flows around and over the turbine and down through a conduit called the draft tube that will exit back to the river.

The complex will be located within a connecting channel excavated in the bedrock which presently separates the upstream and downstream sections of the river. The upstream portion of the channel will be referred to as the power intake channel and the downstream portion of the channel will be referred to as the tailrace channel. The Burntwood River flows will be regulated through the Intake/Powerhouse/Service Bay Complex with a control system that optimizes the turbine performance.

The plant rated discharge will be 1,100 cubic metres per second, producing a maximum plant capacity of approximately 200 MW.

There will be a road on the upstream side of the structure to allow access across the structure.

Non-overflow Gravity Dam

The Non-overflow Gravity Dam will be a reinforced concrete structure that will be located on the north side of the Burntwood River, northeast of Taskinigup Falls between the Intake/Powerhouse/Service Bay complex and the Spillway. The purpose of the Non-overflow Gravity Dam, as part of the system of Principal and Secondary structures will be to maintain upstream water levels within a designated range.

There will be a road on the upstream side of the structure to allow access across the structure.

Spillway

The spillway will be a reinforced concrete structure that will be located on the north side of the Burntwood River, northeast of Taskinigup Falls adjacent to the Non-overflow Gravity Dam. The purpose of the spillway will be to pass excess inflows and to be part of the system of flow regulation. The structure will be located within a connecting channel, referred to as the spillway channel, excavated in the bedrock which separates the upstream and downstream sections of the river. Operable steel vertical lift gates within the structure will be used to control the flow of water in the spillway channel. The spillway will be designed to pass the Probable Maximum Flood (PMF) safely.

There will be a road on the upstream side of the structure to allow access across the structure.

Transition Structures

The Transition Structures will be mass concrete structures that will connect the earthworks structures to the concrete structures. There will be two such structures, the South Transition and the North Transition. The South Transition will connect the Main Dam to the Intake/Powerhouse/Service Bay Complex. The North Transition will connect the Spillway to the North Dyke.

There will be a road on top of the structures to allow access across the structures.

SCHEDULE 4.4

DESCRIPTION OF SECONDARY STRUCTURES

North Dyke

The North Dyke will be an earthworks structure that will be located on the north side of the Burntwood River, approximately 250 metres (800 feet) north of the northeast end of the Spillway. The purpose of the North Dyke, as part of the system of Principal and Secondary Structures, will be to maintain upstream water levels within a designated range. The North Dyke will be constructed from earth and rock-fill materials obtained from the local area.

There will be a service road on top of the structure to allow access across the structure for inspection and access to the Upstream Channel Improvement Area.

Upstream Channel Improvement Area

The Upstream Channel Improvement Area will be an excavation in the bedrock that will be located immediately northeast and adjacent to Wuskwatim Falls. The purpose of this structure will be to reduce the natural flow restriction at the outlet of Wuskwatim Lake.

SCHEDULE 4.5

DETAILED DESCRIPTION OF SUPPORTING INFRASTRUCTURE

Access Road

An all-weather access road to the **Wuskwatim Project** site from the Provincial road network will be constructed to provide access to the construction site and borrow areas during the building of the construction camp, and project support facilities and the generating station. The purpose of the road will be to move personnel, equipment and materials to and from the **Wuskwatim Project** site.

Electrical Power and Communications

There will be various electrical power and communications support infrastructure for the main construction camp and work area including the electrical distribution systems, construction power sub-station, emergency annunciation systems and communication systems.

Initial Construction Camps and Work Areas

Initial construction camps and work areas will be located at one or more of the borrow areas and storage areas for the purpose of constructing initial support facilities including the access road and the main construction camp. The initial construction camps will accommodate approximately 80 people and will be required to commence the work of clearing and grading of support facilities areas and installing: sewer and water services, pumphouse, sewage treatment plant and the initial portion of the main construction camp. The initial construction camps will consist of portable structures. Portable structures will also function as dining buildings, recreational areas, etc. As the main construction camp is put in place, these units will be incorporated into the main construction camp.

Main Construction Camp and Work Areas

The main construction camp will be a temporary facility designed to support the construction of the **Wuskwatim Project** and will not be designed to accommodate families.

The general features of the construction camp will be:

- Portable structures;
- Employee accommodations, consisting of a single room for each person

with a bed, table and lamp, and closet, with communal washroom/showers and laundry facilities;

- A central dining room/kitchen facility, which will supply all meals;
- Recreation areas, training rooms, a beverage room, first aid facilities, and chapel;
- Sewer and water systems;
- Separate accommodation buildings for male and female workers; and
- 24-hour security and fire alarm monitoring.

The purpose of the project support facilities will be to provide buildings and areas to accommodate project site engineering and administrative functions and services.

The project support facilities will include the following:

- General Contractor's work area (concrete batch plant, rock processing plant, maintenance and equipment storage areas, offices etc.);
- Manitoba Hydro Project offices;
- Manitoba Hydro maintenance garage and camp maintenance facilities;
- Materials Laboratory Testing Facilities;
- Allied Hydro Council and Hydro Projects Management Association office building; and
- Stores materials buildings and storage areas.

Both Manitoba Hydro and the General Contractor will store materials at the construction site. The General Contractor will use silos for cement storage and open area storage for rebar, piping, etc. Manitoba Hydro will supply a secured open site storage area for items such as structural steel, anchors, gates, etc., and closed heated and unheated storage buildings for smaller materials.

There will be various types of support equipment that will be part of the support infrastructure including but not necessarily limited to:

- Fire fighting equipment;

- Vehicle garage equipment;
- Marine equipment;
- Survey equipment;
- Material lab equipment;
- Field exploration equipment;
- Camp and work area maintenance equipment;
- Mechanical and electrical test equipment
- Oil spill handling equipment; and
- Ambulance.

SCHEDULE 4.6

DATUM

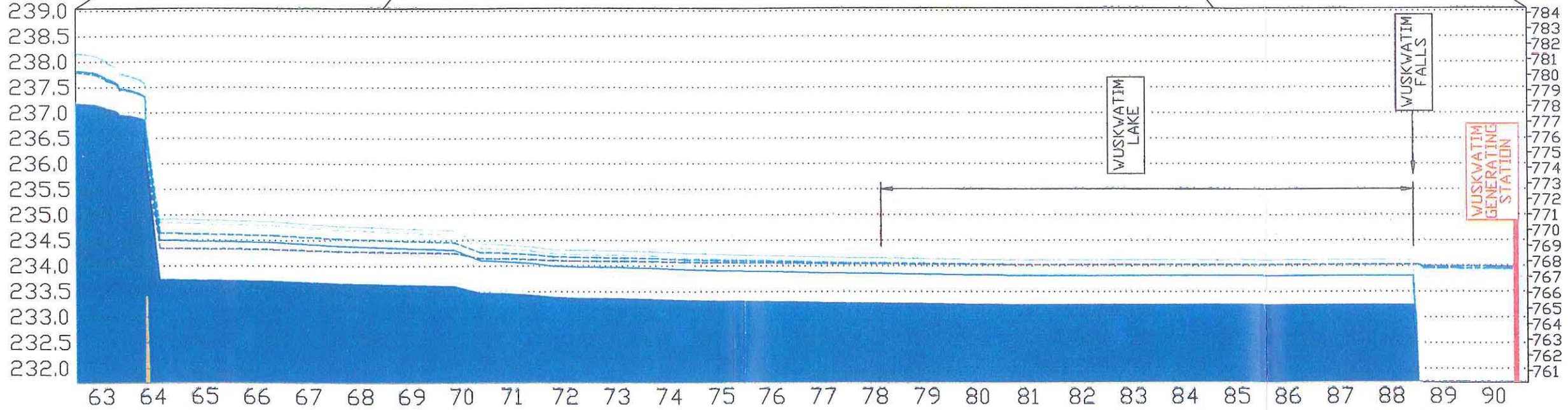
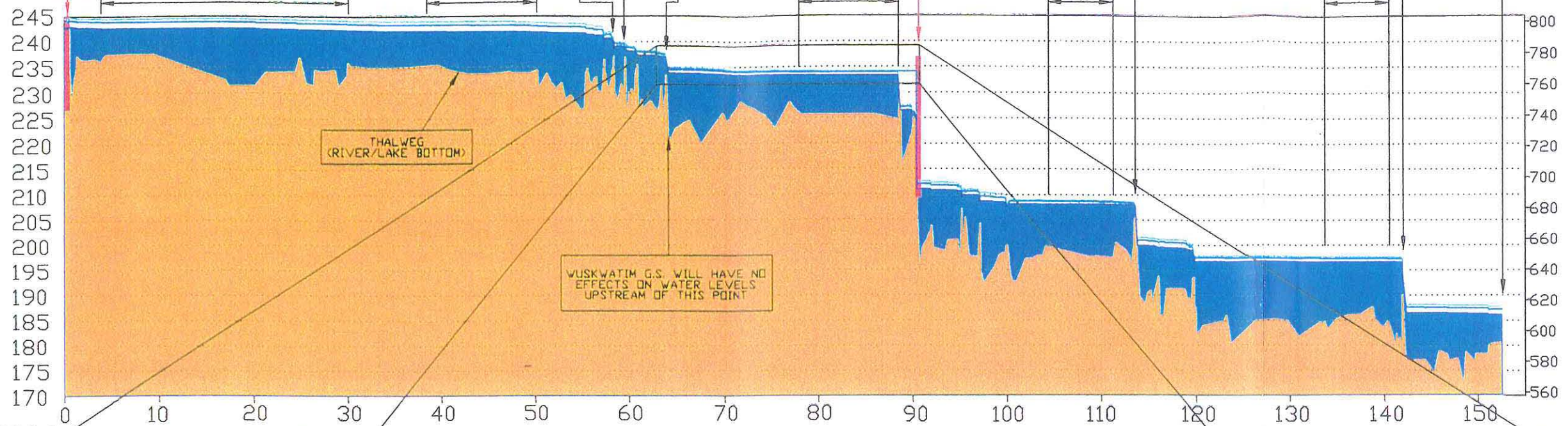
Topographic mapping, geotechnical and water level information for planning and design of the **Wuskwatim Project** will be based upon Canadian Geodetic Vertical Datum (CGVD) Revision No. 3, 1971, which is generally referred to by Manitoba Hydro as the 1969 local adjustment. The original basis of Revision No. 3 is the CGVD published in 1928. The **1996 Implementation Agreement** references CGVD Revision No. 2, 1970. Revision No. 3 does not change any relevant elevation defined by Revision No. 2. Either reference refers to the same elevation and for the purposes of this agreement will be treated as equivalent.

All water levels referenced in the **AIP** are to be inferred as measured in terms of elevations **ASL**, CGVD 1971, Revision No. 3.

**SCHEDULE 4.7
RAT-BURNTWOOD RIVER OPEN WATER LEVEL PROFILE
NOTIGI TO THOMPSON
EXISTING AND DEVELOPED CONDITIONS
WITH WUSKWATIM PROJECT**

ELEVATION IN METRES [CGVD REVISION 3 1971]

ELEVATION IN FEET [CGVD REVISION 3 1971]



DISTANCE IN KILOMETRES DOWNSTREAM FROM THE NOTIGI CONTROL STRUCTURE

UNDEVELOPED WUSKWATIM GENERATING STATION	
WATER LEVEL PROFILE	FLOW CONDITION
	HIGH
	AVERAGE
	LOW

DEVELOPED WUSKWATIM GENERATING STATION	
WATER LEVEL PROFILE	FLOW CONDITION
	HIGH
	AVERAGE
	LOW

- NOTES:
1. ALL PROFILES REPRESENT STEADY STATE CONDITIONS
 2. THALWEG IS ASSUMED FOR ALL LAKES

1	01/02/08	MODIFIED CHART SCALES, AND DRAWING SCALE	MES	BES	BES
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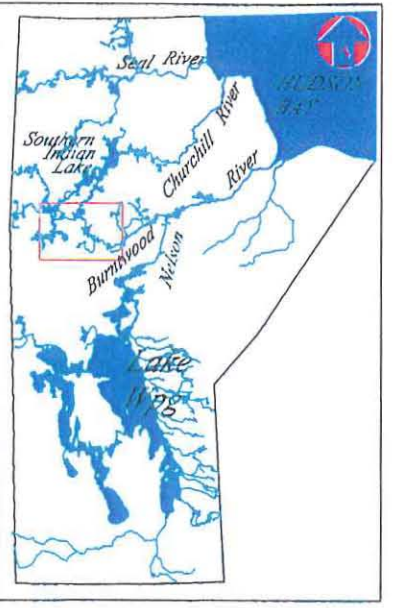
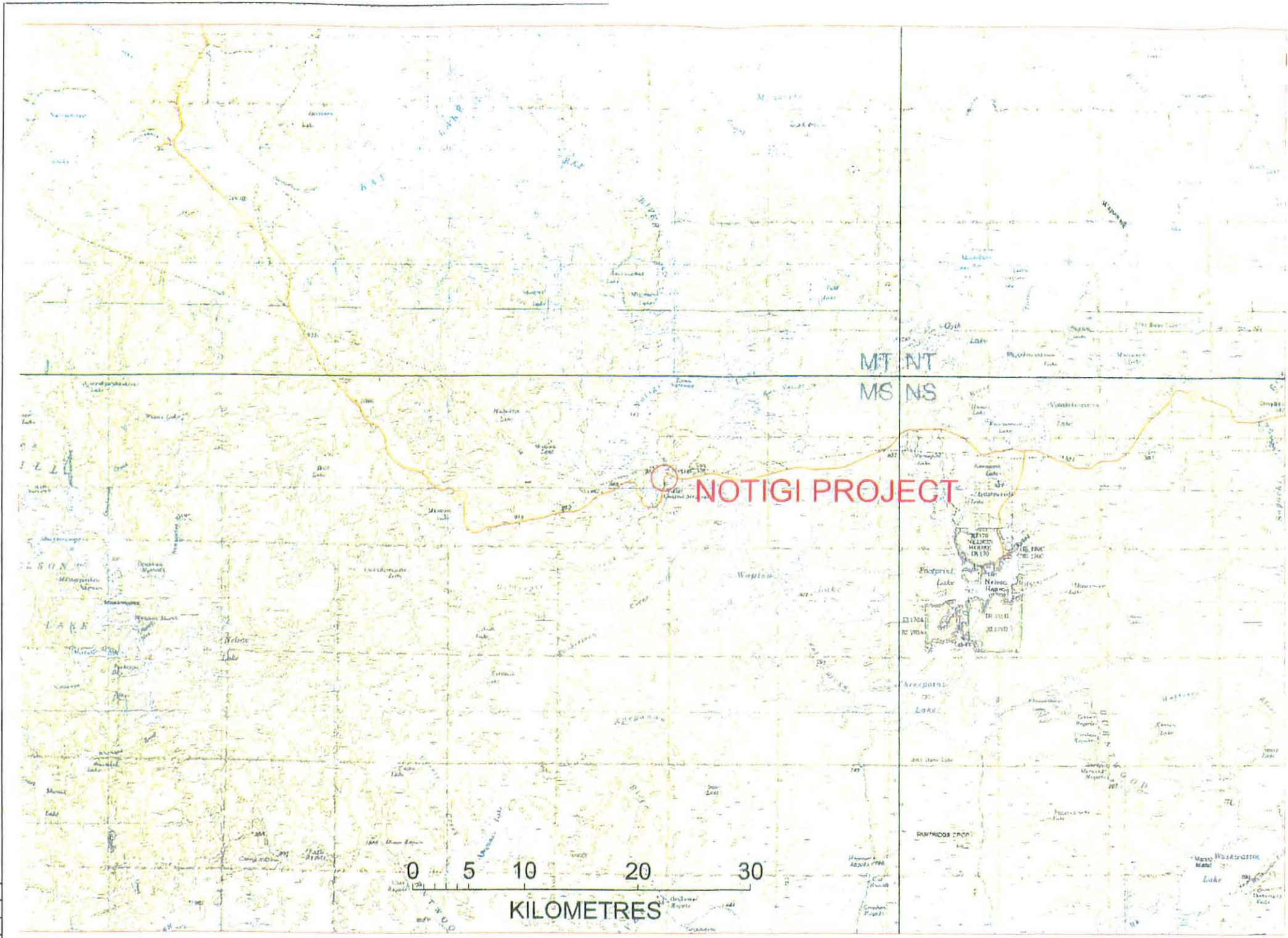
MANITOBA HYDRO
POWER SUPPLY - POWER PLANNING & OPERATIONS

**RAT-BURNTWOOD RIVER OPEN WATER LEVEL PROFILE
NOTIGI TO THOMPSON
EXISTING & DEVELOPED CONDITIONS
WITH WUSKWATIM PROJECT**

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CHECK BES		01	01
SCALE AS SHOWN			
DATE 2001/01/09			

SCHEDULE 5.1

**NOTIGI PROJECT
REGIONAL LOCATION PLAN**



KEYMAP



FOR MICROFILM USE ONLY

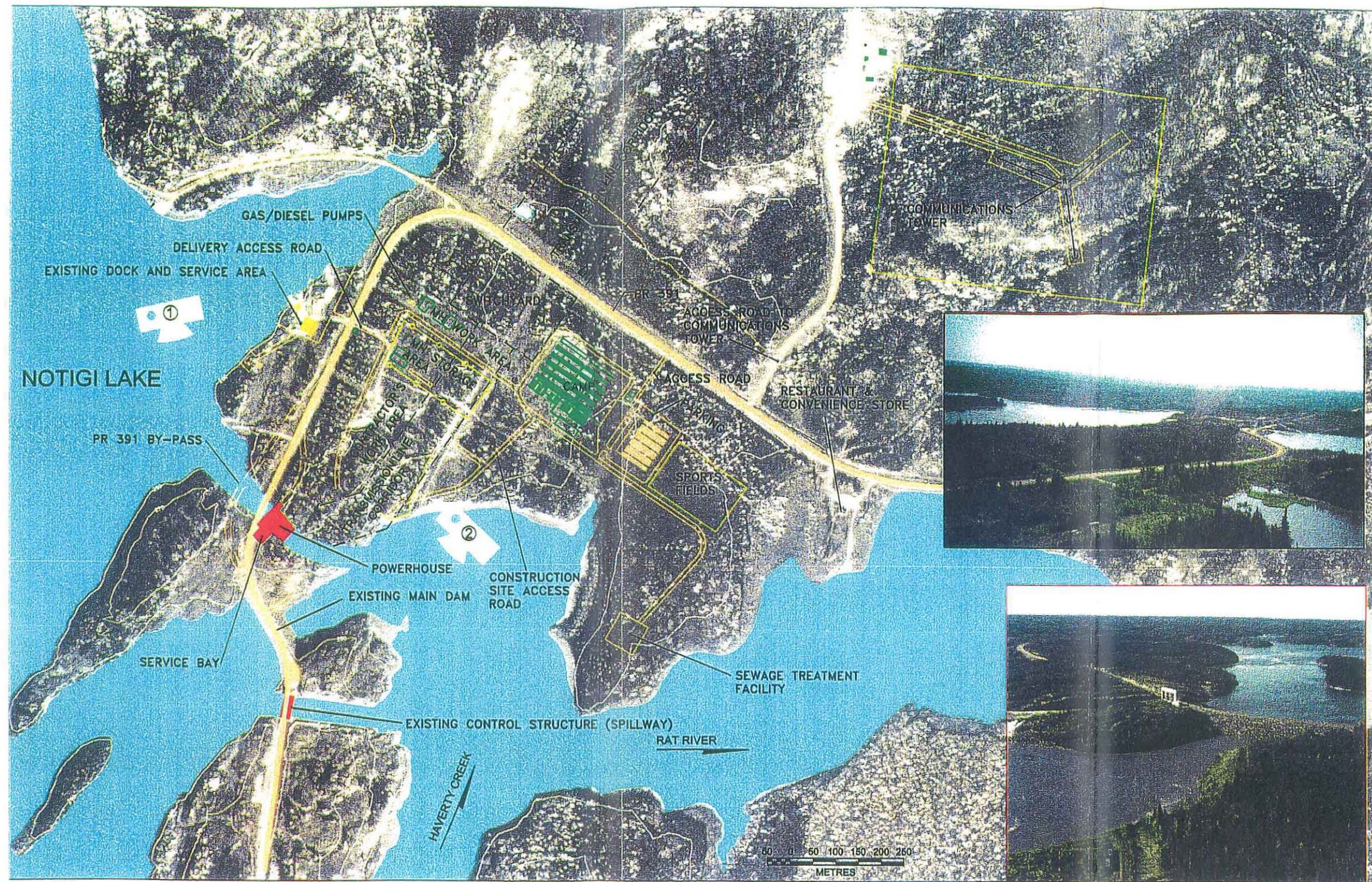
AUTOCAD ORIGINAL

		MANITOBA HYDRO POWER SUPPLY - POWER PLANNING & OPERATIONS	
		NOTIGI GENERATING STATION	
		NOTIGI PROJECT REGIONAL LOCATION PLAN	
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SCHEDULE 5.2

**NOTIGI PROJECT
GENERAL ARRANGEMENT**



1

2

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MANITOBA HYDRO
 POWER SUPPLY - POWER PLANNING & OPERATIONS
 NOTIGI GENERATING STATION

NOTIGI PROJECT
 GENERAL ARRANGEMENT

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SCHEDULE 5.2

SCHEDULE 5.3

DESCRIPTION OF THE PRIMARY FACILITIES

Intake/Powerhouse/Service Bay Complex

The Intake/Powerhouse/Service Bay Complex will be a reinforced concrete and steel structure that will be located about 150 metres north of the existing Notigi Main Dam. The complex will be connected to existing bedrock on the south side by a South Transition Structure and a Tie-In Wall. The north side will be connected directly to the existing bedrock.

The complex will contain two horizontal, double-regulated bulb turbine/generator assemblies. Each unit will have two water intake passages constructed of reinforced concrete that are close-coupled and integrated into the powerhouse. The two water passages in each unit will direct the river flows in a horizontal direction around the bulb turbine blades and through a water passage called the draft tube that will exit back to the river.

The complex will be located within a connecting channel excavated in the bedrock which presently separates the upstream and downstream sections of the river. The upstream portion of the channel will be referred to as the power intake channel and the downstream portion of the channel will be referred to as the tailrace channel. Flows will be regulated through the Intake/Powerhouse/Service Bay Complex with a control system that optimizes the turbine performance.

The plant rated discharge will be 1,060 cubic metres per second, producing a maximum plant capacity of approximately 100 MW.

Provincial Road 391 will cross on a road on the upstream side of the structure.

South Transition Structure and Tie-in Wall

The South Transition Structure will be a mass concrete structure that connects the Intake/Powerhouse/Service Bay complex to the Tie-In Wall. The Tie-In Wall will be a reinforced concrete structure that is connected directly to the existing bedrock face of the channel excavated for the powerhouse and to the south side of the South Transition Structure.

Provincial Road 391 will cross on a road on the top of the structure.

SCHEDULE 5.4

DESCRIPTION OF EXISTING PRINCIPAL AND SECONDARY STRUCTURES

Notigi Control Structure (Spillway)

The existing Notigi Control Structure is a reinforced concrete structure located just south of the Notigi Main Dam. The structure consists of three bays each with operable steel vertical lift gates that control the sluiceway structure. The structure is located within a connecting channel excavated in the bedrock between the upstream and downstream sections of the river. The purpose of the Control Structure has been to divert and regulate the **CRD**. After construction of the **Notigi Project** the Notigi Control Structure will act as the Spillway. The purpose of the Spillway will be to pass **CRD** flows when required.

Provincial Road 391 currently crosses on top of the structure.

Notigi Main Dam

The existing Main Dam is an earthwork structure that is located across the former channel of the Rat River. The Main Dam is constructed from earth and rock-fill materials obtained from the local areas. The purpose of the Main Dam as part of the existing system of Principal and Secondary Structures is to maintain upstream water levels within a designated range.

Provincial Road 391 currently crosses on top of the structure.

Saddle Dams

There are two existing saddle dams located approximately two kilometres southwest of the Notigi Control Structure. The purpose of these structures, as part of the system of Principal and Secondary Structures, is to maintain upstream water levels within a designated range.

Provincial Road 391 currently crosses on top of the structures.

SCHEDULE 5.5

DESCRIPTION OF SUPPORTING INFRASTRUCTURE

Electrical Power and Communication

There will be various electrical power and communications support infrastructure for the main construction camp and work area including the electrical distribution systems, construction power sub-station, emergency annunciation systems and communication systems.

Initial Construction Camp and Work Area

An initial construction camp and work area will be located in the immediate vicinity of the **Notigi Project** for the purpose of constructing the support facilities including the main construction camp. The initial construction camp will accommodate approximately 50 people and will be required to commence the work of clearing and grading of support facilities areas and installing: sewer and water services, pumphouse, sewage treatment plant, and the initial portion of the main construction camp. The initial construction camp will consist of portable structures. Portable structures will also function as dining buildings, recreational areas, etc. As the main construction camp is put in place, these units will be incorporated into the main construction camp.

Main Construction Camp and Work Areas

The main construction camp will provide accommodation when required for workers employed in the construction of the **Notigi Project**. The main construction camp will be a temporary facility, designed to support the construction of the **Notigi Project**, and it will not be designed to accommodate families.

The general features of the construction camp will be:

- Portable structures;
- Employee accommodations consisting of a single room for each person with a bed, table and lamp, and closet, with communal washrooms/showers and laundry facilities;
- A central dining room/kitchen facility which will supply all meals;
- Recreation areas, training rooms, a beverage room, first aid facilities, and chapel;

- Sewer and water systems;
- Separate accommodation buildings for male and female workers; and
- 24-hour security and fire alarm monitoring.

The purpose of the project support facilities will be to provide buildings and areas to accommodate project site engineering and administrative functions and services.

The project support facilities will include the following:

- General Contractor's work area (concrete batch plant, rock processing plant, maintenance and equipment storage areas, offices etc.);
- Manitoba Hydro Project offices;
- Manitoba Hydro maintenance garage and camp maintenance facilities;
- Materials Laboratory Testing Facilities;
- Allied Hydro Council and Hydro Projects Management Association office building; and
- Stores materials buildings and storage areas.

Both Manitoba Hydro and the General Contractor will store materials at the construction site. The General Contractor will use silos for cement storage and open area storage for rebar, piping, etc. Manitoba Hydro will supply a secured open site storage area for items such as structural steel, anchors, gates, etc. and closed, heated and unheated storage buildings for smaller materials.

There will be various types of support equipment that will be part of the support infrastructure including but not necessarily limited to:

- Fire fighting equipment;
- Vehicle garage equipment;
- Marine equipment;
- Survey equipment;
- Material lab equipment;
- Field exploration equipment;
- Camp and work area maintenance equipment;
- Mechanical and electrical test equipment
- Oil spill handling equipment; and

- Ambulance.

SCHEDULE 5.6

DATUM

Topographic mapping, geotechnical and water level information for planning and design of the **Notigi Project** will be based upon Canadian Geodetic Vertical Datum (CGVD) Revision No. 3, 1971, which is generally referred to by Manitoba Hydro as the 1969 local adjustment. The original basis of Revision No. 3 is the CGVD published in 1928. The **1996 Implementation Agreement** references CGVD Revision No. 2, 1970. Revision No. 3 does not change any relevant elevation defined by Revision No. 2. Either reference refers to the same elevation and for the purposes of this agreement will be treated as equivalent.

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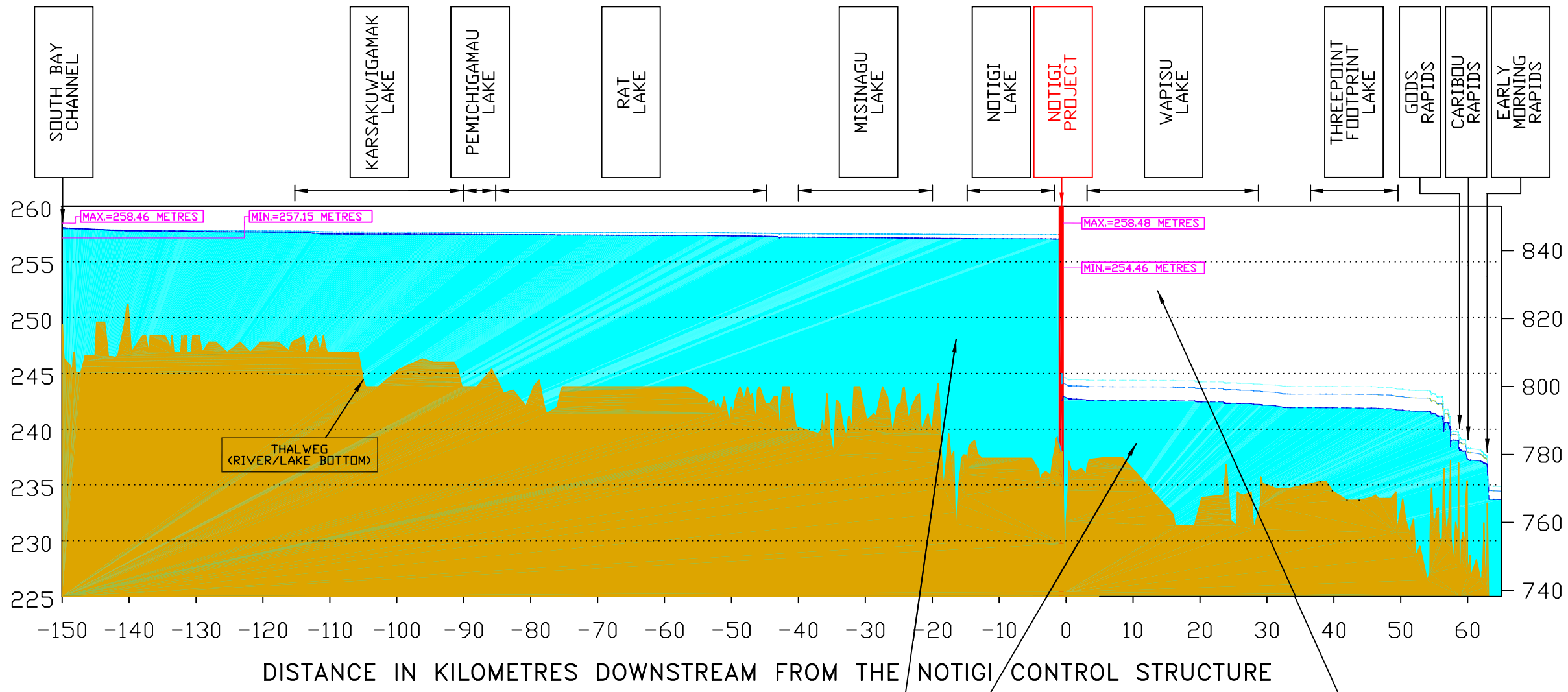
The existing drawings for the Notigi Control Structure and related works and the water level information upstream of the Notigi Control Structure generally refer to the Churchill River Construction Datum. All relevant information will be converted to CGVD Revision No. 3, 1971, as required for the purposes of development of the **Notigi Project**.

SCHEDULE 5.7

**RAT - BURNTWOOD RIVER OPEN WATER LEVEL PROFILE
SOUTH BAY TO EARLY MORNING RAPIDS
EXISTING & DEVELOPED CONDITIONS
WITH NOTIGI PROJECT**

ELEVATION IN METRES [CGVD REVISION 3 1971]

ELEVATION IN FEET [CGVD REVISION 3 1971]



The undeveloped and developed water regimes are described in Article 5.4.

Seasonal and monthly fluctuations of water levels and flows will be unchanged by the operation of the **Notigi Project**

Daily fluctuations of water levels and flows will result from the operation of the **Notigi Project**.

For details see Articles 5.4.5 and 5.4.7 for areas upstream of the **Notigi Project**, and see Articles 5.4.6 and 5.4.7 for areas downstream of the **Notigi Project**.

Notigi Project will be capable of operating within the full range of water levels currently experienced on Notigi Lake

UPSTREAM OF NOTIGI PROJECT		DOWNSTREAM OF NOTIGI PROJECT	
WATER LEVEL PROFILE	FLOW	WATER LEVEL PROFILE	FLOW CONDITION
	TYPICAL LOW		HIGH
	TYPICAL HIGH		AVERAGE
			LOW

(MIN., MAX., REPRESENTS HISTORICAL OPERATING RANGE)

NOTES:
 1. ALL PROFILES REPRESENT STEADY STATE CONDITIONS
 2. THALWEG IS ASSUMED FOR ALL LAKES

1	01/02/08	MODIFIED IMPERIAL SCALE VALUES, DATE, AND SCALE	MES	BES	BES
NO.	DATE	REVISIONS	BY	CHKD.	APP.

MANITOBA HYDRO
POWER SUPPLY - POWER PLANNING & OPERATIONS

**RAT-BURNTWOOD RIVER OPEN WATER LEVEL PROFILE
SOUTH BAY TO EARLY MORNING RAPIDS
EXISTING AND DEVELOPED CONDITIONS
WITH NOTIGI PROJECT**

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