

SECTION 1

INTRODUCTION

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1.0 INTRODUCTION

This Socio-Economic, Resource Use and Heritage Resources Supporting Volume (SE SV) is one of six volumes produced in support of the Response to EIS Guidelines for the Keeyask Generation Project (the Project) Environmental Impact Statement (EIS). The EIS has been developed by the **Keeyask Hydropower Limited Partnership** (the Partnership) as part of the regulatory review of the Project under the *Canadian Environmental Assessment Act* and *The Environment Act* (Manitoba).

The EIS consists of the following:

- A video, *Keeyask: Our Story*, which presents the Keeyask Cree Nations' (KCNs) history and perspectives related to hydroelectric development. Presented through the lens of their holistic Cree worldview, it explains the journey taken by the KCNs as they evaluated their concerns about the Project, the nature of their participation as Partners, and the decisions they ultimately made to support the Project;
- An executive summary;
- A Response to EIS Guidelines (the 'EIS') issued in response to an application by the Partnership for environmental approvals under the government regulatory environmental assessment process. This response includes findings and conclusions, with charts, diagrams, and maps to clarify information in the text, and a concordance table to cross reference requirements of the EIS Guidelines with information in the EIS; and
- The KCNs' Evaluation Reports providing each of the KCNs' own evaluation of the effects of the Project on their community and Members and including **Aboriginal traditional knowledge (ATK)** relevant to the Partnership's Response to the EIS Guidelines.

The six supporting volumes were developed by the Manitoba Hydro environmental team in consultation with the KCNs and their Members to provide details about the Project Description and about the research and analysis of the following topics: Public Involvement Program, Physical Environment, Aquatic Environment, Terrestrial Environment, Socio-Economic Environment, Resource Use and Heritage Resources (the latter three topics are included in this supporting volume). The supporting volumes have been reviewed, commented on, and, as appropriate, finalized in a manner consistent with the arrangements of the Partnership.

The SE SV is comprised of three discrete components:

- **Socio-Economic Impact Assessment (SEIA);**
- Resource Use; and
- Heritage Resources.

1.1 PURPOSE AND CONTENT OF THE SOCIO-ECONOMIC IMPACT ASSESSMENT

The SEIA section of this SE SV examines the effects of the Project on the people and communities who are part of the existing socio-economic environment in the immediate vicinity of the Project. It also looks at the northern Manitoba region as a whole and the overall economies of Manitoba and Canada. The SE SV presents the following:

- The existing environment, which could be affected by the Project, including the current situation, past influences that have shaped today's existing environment (including past hydroelectric development), as well as how the existing environment may evolve into the future without the Project (when information is available);
- The nature and predicted effects of the Project on the socio-economic environment that describes the context of measures already in place to enhance beneficial effects and to reduce adverse effects of the Project for the KCNs. Measures are identified in the **Joint Keeyask Development Agreement (JKDA)** between Manitoba Hydro and the KCNs, and measures are included in individual **Adverse Effects Agreements (AEAs)** between Manitoba Hydro and each of the KCNs;
- Mitigation measures to reduce adverse socio-economic effects;
- Residual effects that may remain after these measures are applied, including cumulative effects; and
- Monitoring plans, which are designed to keep track of effects as they unfold and to identify unanticipated effects, triggering follow-up action as required.

This supporting volume is organized into the following components of the socio-economic environment to assist regulators, who are accustomed to reviewing assessment documentation by component:

- **Economy** (including employment and training, business, income, cost of living and the resource economy);
- **Population, Infrastructure and Services** (including population, housing, infrastructure and services, transportation infrastructure and land); and
- **Personal, Family and Community Life** (including community governance, goals and plans, community health, mercury and human health, public safety and worker interaction, travel access and safety, culture and spirituality, and aesthetics).

1.2 OVERVIEW OF ASSESSMENT APPROACH

1.2.1 Pre-Project Planning, Joint Keeyask Development Agreement and Adverse Effects Agreements

The Project is proposed in the immediate vicinity of where the KCNs have lived for thousands of years. Engagement of the KCNs has been integral to the planning and design of the Project for over a decade. TCN has been involved in Project planning activities since the early 1990s. As a result, the KCNs became Project partners with Manitoba Hydro in 2009 following referendum votes by the membership of each First Nation.

Initially, engagement activities with Tataskweyak Cree Nation (TCN) and then subsequently with War Lake First Nation (WLFN), York Factory First Nation (YFFN) and Fox Lake Cree Nation (FLCN), focused on early Project planning and the development of a Project partnership. Later, the focus shifted to more detailed Project planning and the **environmental assessment (EA)** process.

A number of early Project planning activities occurred with TCN between 1992 and 1996. Detailed information is provided in CNP's Keeyask Environmental Evaluation Report and is summarized as follows:

Joint Studies on the Impact of Future Hydroelectric Development in the Split Lake Area

A number of studies to analyze the impact of the Birthday and Gull rapids planning options in the community of Split Lake were undertaken in 1992 and 1996 by TCN and Manitoba Hydro, culminating in the publication of the Split Lake Post-Project Environmental Review. In response to a request from TCN, the community and Manitoba Hydro examined the impacts of Manitoba Hydro project initiatives that had occurred within the Split Lake Resource Management Area (SLRMA) between 1957 and 1996. It reviewed the impacts of Manitoba Hydro development in the SLRMA from both traditional knowledge and technical science perspectives and identified baseline research requirements for development of a hydroelectric project at Gull Rapids. The review generated five separate reports that documented the outcome of the review process. This process contributed to the decision by Manitoba Hydro not to pursue high and intermediate dam height options at Birthday and Gull Rapids and to instead adopt a lower dam height option located at Gull Rapids, which had the least amount of flooding of the options available (see Chapter 4, Section 4.5 of the Response to EIS Guidelines).

Between 1998 and 2009, engagement between Manitoba Hydro and the KCNs continued, specifically with TCN and WLFN (together known as the CNP) and, since 2002, with YFFN and FLCN. For convenience, these four in-vicinity First Nations are known as the KCNs, but this term does not represent a legal or political entity. Engagement activities included development of the Keeyask Hydropower Limited Partnership (the Partnership) and other matters, among which were community studies to assess not only possible environmental impacts, but also each community's interests in the Project. The understandings were formalized in the JKDA. In addition, individual AEAs were negotiated between Manitoba Hydro and the KCNs to provide mitigation and compensation for effects identified

by each First Nation. In 2009, this relationship was solidified through the signing of the JKDA and individual AEAs by each of the KCNs following a referendum of their membership.

A brief summary of these agreements follows.

Joint Keeyask Development Agreement (JKDA)

The KCNs and Manitoba Hydro negotiated the JKDA between 2002 and 2008 followed by community referendums in early 2009. These negotiations shaped the key features of the Project and the terms of the Partnership between the KCNs and Manitoba Hydro, including governance of the Partnership and financing and management of the Project. Among other matters, the JKDA also addresses the KCNs' potential income opportunities, training, construction and operations employment, business opportunities, and involvement in the Partnership's environmental and regulatory affairs. Joint working groups were established to address key development issues such as project description, employment and training, reservoir clearing, waterways management, commercial terms and access road routing. Each of the KCNs communities consulted with their respective Members about the JKDA and held a community referendum of Members to support Chiefs and Councils in ratifying the agreement. In May 2009, the JKDA was signed in the community of Split Lake by representatives from each of the KCNs and Manitoba Hydro (see Chapter 2 of the Response to EIS Guidelines).

Adverse Effects Agreements (AEA)

As part of the JKDA negotiation process, each of the KCNs communities negotiated an AEA with Manitoba Hydro containing mitigation and compensation measures to address known or foreseeable adverse effects of the Project, identified by each community. Each AEA was ratified by the respective First Nation following a referendum held concurrently with the JKDA referendum (see Chapter 2 of the Response to EIS Guidelines).

1.2.2 Role of the Keeyask Cree Nations in the Environmental Assessment

The JKDA sets out how the KCNs communities and Manitoba Hydro participate in the EA of the Project. As both proponents of the Project and as affected communities, the KCNs communities played an integral role, along with Manitoba Hydro, in directing and shaping the EA. As co-proponents of the Project, they participated in the EA process through membership on a number of coordination and technical joint working groups, and reviewed the EIS and associated supporting volumes that form this filing. Key aspects of their participation included the following:

- **Keeyask Environmental and Regulatory Protocol (the Protocol):** Schedule 3-1 of the JKDA sets out the way that the KCNs communities and Manitoba Hydro intend to work together to undertake the EA, to develop the EIS for filing with regulatory authorities and to participate in the hearing process associated with environmental licensing. Although set out in the final 2009 JKDA, the initial version of the Protocol was developed in the early 2000s by TCN and Manitoba Hydro. TCN concluded at an early point that they should determine and present their own evaluation of the environmental impacts of the Project on their own community. The 2001 protocol subsequently

incorporated WLFN, YFFN and FLCN and has been adjusted over the years, with the current version incorporated into the JKDA. The Protocol has guided the various stages of the EA process from that time. The Protocol set out an organizational structure for the KCNs, Manitoba Hydro and the **EA Study Team**¹ to work together. Key aspects of this organization are as follows:

- **Partners Regulatory and Licensing Committee (PRLC):** The PRLC is composed of nine Members from the KCNs (three from TCN and two each from WLFN, YFFN and FLCN) and three staff from Manitoba Hydro who collectively govern the Partnership's environmental activities. TCN and Manitoba Hydro co-chair the committee. The PRLC was established to oversee the EA process and to make key decisions, such as the filing of the Environment Act Proposal Form and the EIS.
- **EIS Coordination Team:** The EIS Coordination Team manages the environmental studies, including final coordination and preparation of the EIS and the environmental protection plans. The EIS Coordination Team is made up of representatives from each of the KCNs and Manitoba Hydro; the EA Study Team supports the process. CNP and Manitoba Hydro each have two voting members on the Coordination Team, and YFFN and FLCN each have one non-voting representative. Decisions are made by consensus except on the rare occasions where a vote is needed.
- **Key Issues Working Groups:** Beginning in 2007, a series of working groups was established to address key issues and to act as a forum for discussion of concern to the KCNs communities. These working groups included the Mercury and Human Health Technical Working Group beginning in 2007, the Aquatic Working Group beginning in 2008 and the Mammals Working Group established in 2009. The working groups included representatives from each of the KCNs communities (including community Members and their advisors), Manitoba Hydro, the EA Study Team and external experts.
 - **Issue Workshops:** The EIS Coordination Team also organized one and two-day workshops regarding important EA topics (*e.g.*, ATK, scoping, **valued environmental components (VECs)**, cumulative effects assessment, and sustainable development).
- **Environmental Studies Working Groups:** Manitoba Hydro has established bilateral working groups with each of the KCNs to review issues of importance to each community, including a review of annual fieldwork plans for environmental studies and sharing results of the studies, as well as issues and concerns raised by each of the KCNs in their respective working group.
- **Community-Based Studies and Community Involvement:** Each of the KCNs communities undertook and completed their own studies to gather ATK, to identify effects from their own

¹ The EA Study Team comprised representatives of all the consulting teams from the environmental disciplines: Physical (Stantec), Aquatic (North South Consultants), Terrestrial (Stantec, ECOSTEM, Wildlife Resources Consultants), Socio-Economic (InterGroup Consultants), Resource Use (North South Consultants) and Heritage Resources (Northern Lights Heritage Services).

perspectives and to contribute to the EA and EIS. Associated activities included the extensive involvement of community Members to inform them about the proposed Project, to obtain their input and to contribute to the EIS.

- **Public Involvement Program beyond Keeyask Cree Nation Communities:** In addition to the involvement of the KCNs, a Public Involvement Program (PIP) was implemented to inform the public beyond the KCNs communities about the Project and to obtain their input at key stages. Further detail can be found in the Public Involvement Supporting Volume.

1.2.3 Aboriginal Traditional Knowledge in the Environmental Assessment

ATK was important when undertaking the EA of the Project. In the Protocol noted in Section 1.2.2, the first guiding principle established among the Partnership was that “information collection for the Environmental Impact Assessment will include both ATK and western scientific analysis” (CNP, YFFN, FLCN and the Manitoba Hydro 2009).

In 2008, representatives of the KCNs communities, Manitoba Hydro and the EA Study Team met in a two-day workshop to identify what ATK meant to them. From this workshop, the EIS Coordination Team established the following set of common principles regarding the inclusion of ATK in the Keeyask EA. These principles were agreed to in May 2009 and are as follows:

The principles set out here have been developed by Manitoba Hydro with TCN, WLFN, YFFN and FLCN (the Keeyask Cree Nations) to reflect how their Aboriginal Traditional Knowledge (ATK) is being and will be included in the Environmental Assessment (EA) for the Keeyask Generation Project.

1. GIVING EQUAL WEIGHT

The EA process honours and respects ATK and the Cree worldview. The EA aims to give equal weight to ATK and western science. It is recognized that ATK has value in and of itself.

2. ENSURING VISIBILITY

ATK will have a distinguishable voice in the Environmental Impact Statement (EIS), and will not be melded with western science so as to become invisible.

3. MAINTAINING AUTHORITY AND CONFIDENTIALITY

Aboriginal people have authority and control over their traditional knowledge. Each of the KCNs, together with its knowledge holders, will choose whether the source of its knowledge is to be acknowledged in the EIS document, or to remain confidential.

4. LEADING DOCUMENTATION — RIGOROUS AND DEFENSIBLE METHODS

Each of the KCNs is taking the lead role in collecting and documenting their ATK. Rigorous and defensible methods will be used to collect and document ATK.

5. ACKNOWLEDGING WORLDVIEWS

The EA process and the EIS document recognize Cree knowledge and western science as distinct worldviews. ATK is more than just information about resources and resource use. There is a role for ATK in each step of the EA process.

6. BUILDING AND SUSTAINING RESPECTFUL RELATIONSHIPS

The EA process aims to foster communication and knowledge-sharing, and to build and sustain respectful relationships between Manitoba Hydro and the KCNs communities.

7. ACKNOWLEDGING THE PAST

Acknowledge the past in the EA process as providing context for the assessment (including temporal context).

8. REFLECTING CULTURAL VALUES AND SPIRITUALITY

Cree spirituality and cultural values are being and will be reflected in the EA process.

9. ACKNOWLEDGING CAUTION AND ADDRESSING UNCERTAINTY

Acknowledge and respect the caution that many KCNs Members have about predictions of environmental effects of hydroelectric development (*e.g.*, uncertainty associated with predictive models). “It is important to employ a precautionary approach that identifies knowledge gaps and recognizes the uncertainty of predictions.”

The organization of the EA process under the Protocol meant that a series of joint working structures were established so that the perspectives of the KCNs, rooted in their ATK, were brought to the EA process. The EIS Coordination Team, in particular, discussed the application of these ATK principles to the EA process as a whole, from issue identification to documenting ATK. In addition, ATK was brought into the SEIA process in the following ways:

- **Issue Identification:** Socio-economic issues of concern were identified by KCNs representatives, including those based on the experience of the KCNs communities during past hydroelectric projects;
- **Joint Planning and Implementation of Socio-Economic Fieldwork Programs:** Joint planning processes were undertaken with YFFN and FLCN to identify and plan the approach for socio-economic fieldwork. A community-based research coordinator and researchers were employed to undertake collection of socio-economic information. The socio-economic study team held bilateral workshops with YFFN and FLCN to review and consolidate key socio-economic effects that were priorities for those First Nations resulting from the fieldwork programs undertaken together. TCN and WLFN conducted a similar socio-economic research program including fieldwork, with assistance from the EA Study Team. In each case, a steering committee was established to guide the process and review results;
- **Drawing from the KCNs Community Studies:** In addition to the collaborative fieldwork programs noted above, this SE SV draws from community-based studies undertaken by each of the KCNs. Specific issue workshops undertaken with YFFN on youth and FLCN on worker interaction contributed issues-specific community knowledge and experience;

- **Drawing from the KCNs Environmental Evaluation Reports:** Each of the KCNs evaluated the impact of the Project on their communities and Members in terms of their own worldview, values and experience with past hydroelectric development; and
- **Community Meetings to Review Draft Socio-Economic Effects and Mitigation Options:** Draft socio-economic effects and mitigation options pertinent to each First Nation were presented for feedback and improvement to the Future Development Group of each of the KCNs.

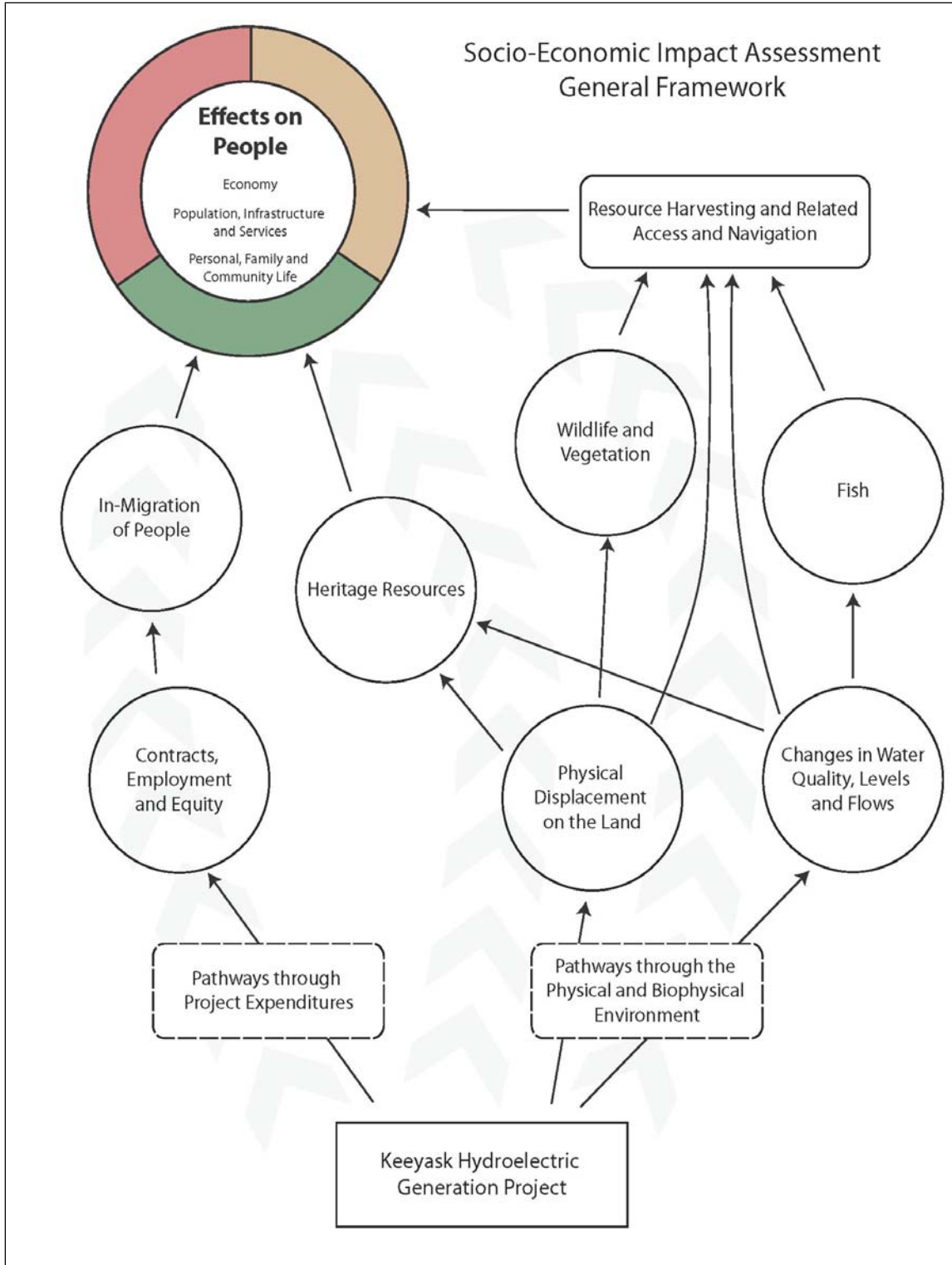
1.2.4 Socio-Economic Framework

This SEIA considers the socio-economic environment — the people, communities, regions and economies potentially affected by the proposed Project. In so doing, it takes into account the array of interrelated factors that contribute to the social and economic well-being of individuals, families and communities.

Figure 1-1 presents a general framework to show the main pathways by which a hydroelectric development could affect people. For simplicity, the figure does not include the detailed connections that occur within and among these pathways. Those are discussed in greater detail in Sections 3, 4 and 5 of this volume.

The framework highlights the following types of pathways:

- **Pathways through the Physical and Biophysical Environment:** Changes in the physical and biophysical environment could have the potential to directly affect the health and well-being of people (*e.g.*, studies examined the quality of water for drinking and the safety of water and ice conditions for travel). They could also affect the water, land and resources that are used by people as part of their living (*e.g.*, country food consumed by people or sold for cash income), their way of life and their culture. Changes could result both from changes to the habitat for fish, mammals and plants used by people, but also through expanded harvest enabled by new access roads (*e.g.*, by local people and by non-local people). Physical changes could also affect heritage resources that are of importance to the history and culture of Cree and other people. Effects on people resulting from changes in the natural environment are of particular importance under both the *Canadian Environmental Assessment Act* and *The Environment Act* (Manitoba); and
- **Pathways through Project Expenditures and Revenues:** This SEIA also considered effects that could result from direct Project expenditures during construction and operation of the Project as well as revenues gained during Project operation. These include employment and business opportunities and training that would be required to build and operate the facility. New employment and business opportunities could also draw people to the region, such as local people returning home after migrating elsewhere or non-local construction workers in-migrating in search of employment. Temporary migrants and long-term populations require housing, facilities and services and have the potential to change the social and economic environment (*e.g.*, social well-being, public safety and human health).



Source: InterGroup Consultants.

Figure 1-1: Socio-Economic Impact Assessment General Framework

1.2.5 Valued Environmental Components

Valued environmental components (VECs) were identified for the socio-economic environment. Socio-economic VECs are aspects of the socio-economic environment that are valued by people (*e.g.*, in-vicinity communities, the proponent, the public or the government involved in the assessment process) and that help to characterize the effects of the Project.

In 2008, VECs were identified initially by the EA Study Team and reviewed in two workshops with representatives of the KCNs communities. Input from Round One of the Keeyask Generation PIP was also used to identify and confirm VECs.

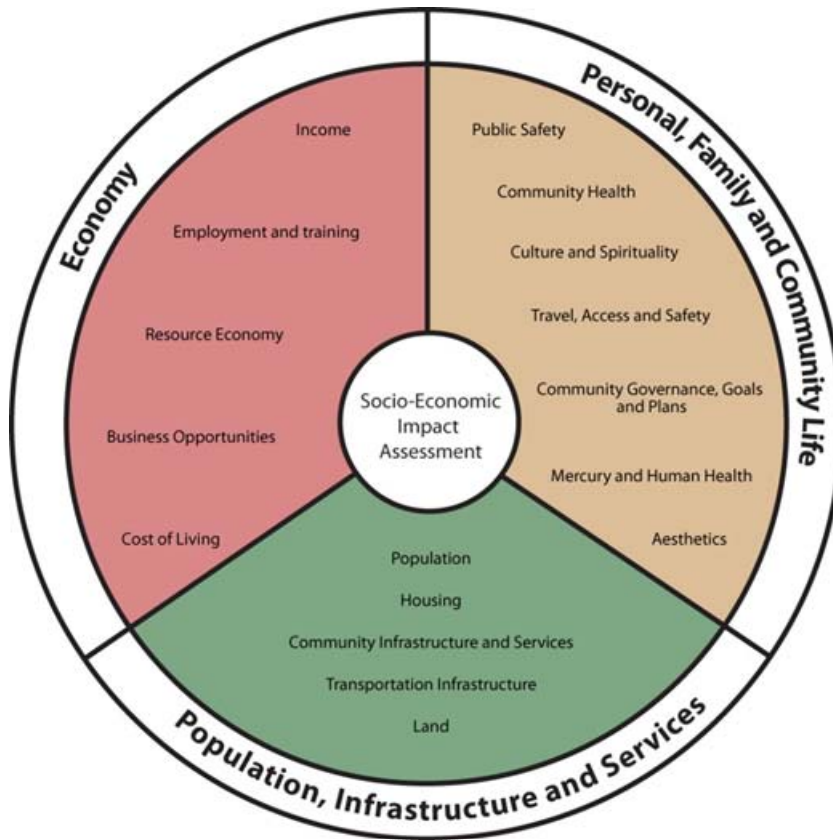
Figure 1-2 illustrates the VECs examined in the SEIA of the Project under the broad components of Economy, Population, Infrastructure and Services, and Personal, Family and Community Life. These have been identified by the EIS Guidelines for the Keeyask Generation Project issued by the Canadian Environmental Assessment Agency in March 2012, and through available studies of other hydroelectric and major development projects (*e.g.*, guidelines, EIS documentation, monitoring studies), as well as through working with the KCNs communities. They are intended to characterize the socio-economic environment using factors that will help to identify changes resulting from the Project. For simplicity, the figure does not illustrate the myriad of connections among these topics, including the following:

- **Economy:** VECs examined include:
 - Employment and training;
 - Business opportunities;
 - Income;
 - Cost of living; and
 - Resource economy.
- **Population, Infrastructure and Services:** VECs examined include:
 - Housing;
 - Community infrastructure and services;
 - Transportation infrastructure; and
 - Land.

Population is considered as a key supporting topic and driver of effects on housing, infrastructure and services.

- **Personal, Family and Community Life:** VECs examined include:
 - Community governance, goals and plans;
 - Community health;
 - Mercury and human health;

- Public safety and worker interaction;
- Travel, access and safety;
- Culture and spirituality; and
- The way the landscape looks (or aesthetics).



Source: InterGroup Consultants.

Figure 1-2: Valued Environmental Components for the Socio-Economic Environment

1.2.6 Scope of Assessment

1.2.6.1 Scope of Project

The Project considered in this SEIA is described in the Project Description Supporting Volume, as well as in Chapter 4 of the EIS. The following activities are not part of the Project:

- The **Keeyask Infrastructure Project (KIP)** (proponent – the Partnership; see discussion that follows);
- The Keeyask Transmission Project (proponent – Manitoba Hydro alone), which includes a transmission line that will bring construction power to the construction site, and transmission lines

that will transmit electricity from the Project to the Radisson Converter Station, where it will enter Manitoba Hydro's integrated power system; and

- The Bipole III Project (proponent – Manitoba Hydro alone), which includes the Keewatinoow Converter Station and a 500 kV HVDC transmission line from the Keewatinoow Converter Station to the Riel Station east of Winnipeg.

The Keeyask Infrastructure Project was licensed in 2011 and began construction in the latter part of 2011. Socio-economic effects of the KIP were assessed in the Keeyask Infrastructure Project Environmental Assessment Report submitted in July 2009.

The Keeyask Infrastructure Project consists of:

- Construction of the 25km north access road that will be used by the Project for vehicle travel to and from the main construction area;
- Construction of Phase 1 of the main construction camp for the Project on the north side of the Nelson River near the Project site. This camp will service workers employed on the Project; and
- Construction and operation of a 125-person start-up camp to service the workers employed on the KIP.

This SEIA accounts for the KIP and its effects as part of the environmental setting for the Project. The KIP and any continuing effects it may create are part of the existing environment to which the Project will be added. Where aspects of the KIP are relevant to assessing the effects of the Project, they are described in the environmental setting and/or in the discussion associated with the assessment of effects.

Monitoring the effects of the KIP is planned. Monitoring results for incorporation in SEIA of the Project were not available at the time of filing.

Effects of the Keeyask Transmission Project will be assessed in a separate EA document that is being submitted to regulators in the fall of 2012.

The Bipole III Project effects are assessed in a separate EIS that was submitted in 2011, prior to the Project EIS.

1.2.6.2 Temporal and Spatial Scope

The assessment focuses on Project-related activities and effects that are expected to occur after the regulatory approvals required to start construction have been received. The temporal scope of the SEIA includes the following phases of the Project:

- **Construction Phase:** Construction of the Project would occur over eight and a half years, with an expected start in 2014. Construction-phase effects on the socio-economic environment are likely to be different in character than those during the operation phase; and
- **Operation Phase:** Beginning in approximately late 2019, the Project would begin operating with the first unit in service. The remaining generation units would be installed and final commissioning completed in 2022. The Project is intended to operate for a century or more with regular

maintenance and upgrades. If the Project is decommissioned at some point in the future, it will be undertaken according to the legislative standards of that time.

A decommissioning phase of the Project has only been dealt with in the main EIS. It notes that, if the Project is due to be decommissioned, a decommissioning plan will be developed well in advance of that phase and according to the standards current at that time. It is expected that such a decommissioning plan would be reviewed with regulatory authorities.

By the time the Project receives its regulatory approvals, the planning and assessment phase, underway since 2000, will be completed and its effects will have occurred already. Where relevant, the nature and effects of the planning and assessment phase are incorporated in the understanding and description of the environmental setting.

The spatial scope of the SEIA is addressed in Section 1.3.

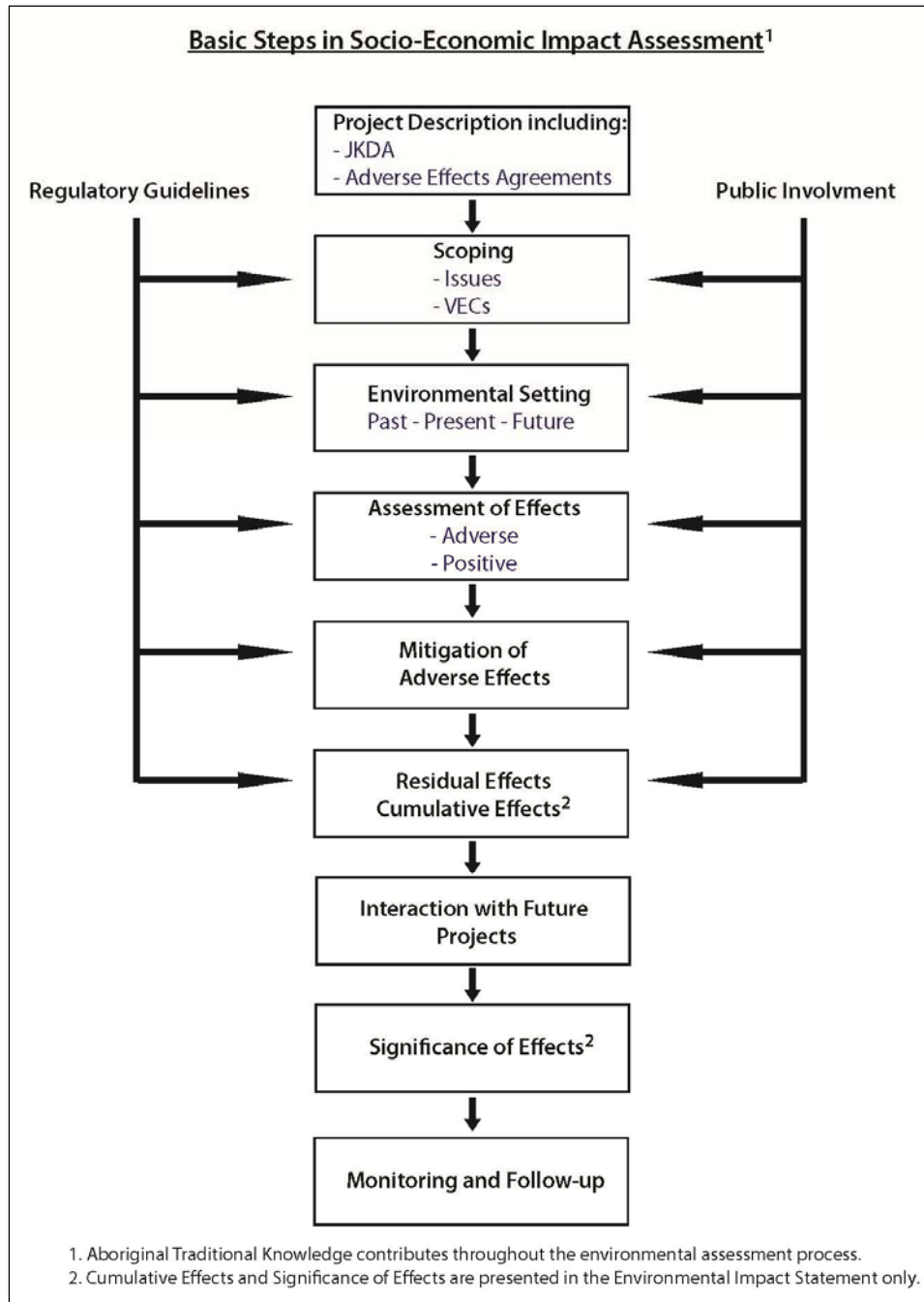
1.2.7 Assessment Methodology

1.2.7.1 Approach

Figure 1-3 presents the basic steps used to assess socio-economic effects of the Project. Key steps included:

- **Project Description:** Defined the characteristics of the Project, which may affect the environment. In this case, the JKDA and AEAs are integral to the implementation of the Project. Therefore, measures identified in these documents (*e.g.*, measures to reduce adverse effects) were considered to be already in place;
- **Scoping:** Identified key issues to be addressed in the EA and VECs that were of importance to people who may be affected by the Project or that helped to clarify the effects of the Project. Regulatory guidelines defined the requirements of the EA process (CEAA 2012). Public involvement, including the KCNs interactions, also helped to identify VECs and issues of concern;
- **Environmental Setting:** Described the existing environment, including the past, the present and the future without the Project (where available);
- **Assessment of Effects:** Assessed the effects of the Project, considering both adverse effects and positive effects;
- **Mitigation of Adverse Effects:** Identified **mitigation** measures to reduce adverse effects;
- **Residual Effects, Cumulative Effects:** Identified the effects that would remain after the application of mitigation measures. Cumulative effects are presented in Chapter 7 of the EIS only;
- **Significance of Effects:** Presented in Chapter 6 of the EIS only; and
- **Monitoring and Follow-up:** Identified monitoring measures to be implemented along with the Project to determine if effects will be as expected and identified follow-up measures to manage effects if they are determined to be different than predicted or to identify unanticipated effects.

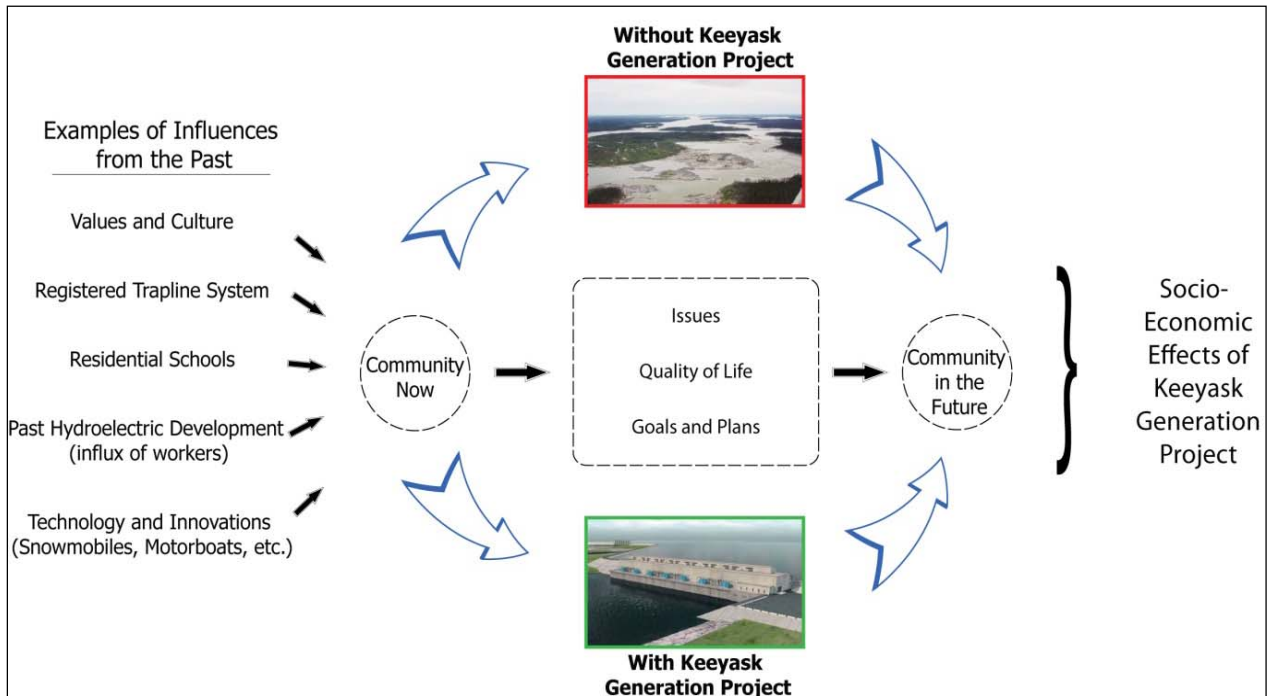
Consistent with the other supporting volumes in this series, cumulative effects assessment and the significance of effects are not presented in the supporting volume; rather they are presented in the EIS Chapter 8, which includes the full range of biophysical and socio-economic effects of the Project.



Source: InterGroup Consultants.

Figure 1-3: Basic Steps in Socio-Economic Impact Assessment

Figure 1-4 presents, at a general level, key concepts employed in the approach of this SEIA. These concepts are applied in Sections 3, 4 and 5 of this supporting volume, which present the environmental baseline and effects assessment for the socio-economic VECs.



Source: InterGroup Consultants.

Figure 1-4: Approach to Socio-Economic Impact Assessment

The figure above illustrates the following:

- The Importance of the Past in Understanding Today’s Socio-Economic Environment:** Communities in the immediate vicinity of the Project have been subject to a wide range of past influences, including actions that shaped the nature, extent and location of their activity on the land (e.g., Treaties, *Natural Resources Transfer Act* and Registered Trapline System), actions that affected their social well-being and culture (e.g., residential schools), technology and innovations (e.g., snowmobiles and motorboats), and of particular relevance to this assessment, past hydroelectric developments. Understanding the past helps to understand the communities today, including their worldview, values, issues and vulnerabilities. The KCNs communities emphasized the importance of examining the past, including learning about and from their experience with previous hydroelectric development;
- The Understanding of the Future without the Project:** The existing environment will continue to evolve and change without the Project. The influences of the past, as well as the actions of today, would affect the nature of the socio-economic environment in the future. To the extent feasible, the socio-economic assessment examined what that future environment may look like without the

Project. Since the Project would occur in the future, this is the appropriate background against which to ascertain Project effects;

- **The Understanding of Community Goals and Plans for the Future:** Unique to the socio-economic environment is the influence that community goals and plans can have on the future and on how the Project may affect that future. Typically, communities of people have goals and plans that are designed to improve the future of their community, resulting in change. Therefore, an understanding of those goals and plans is important. In addition, the perspectives of people regarding their future can influence how they see effects of a project (*e.g.*, the type of benefits derived from the project may or may not fit with those goals and plans). This could even influence whether a project effect is considered to be adverse or positive; and
- **Identifying Effects:** A socio-economic effect is the difference between what the socio-economic environment would be like in the future with the Project and without the Project.

1.2.7.2 Methods

The SEIA employed both quantitative and qualitative methods to assess effects on VECs.

Quantitative methods were used in three key areas:

- **Economy:** A quantitative supply/demand model was developed to assess the extent to which construction employment opportunities would be filled by the northern Aboriginal **labour force**, the Aboriginal labour force in the Churchill-Burntwood-Nelson area (as defined in the **Burntwood-Nelson Agreement¹ (BNA)**) and the labour force in the KCNs communities. The analysis considered a wide range of factors, including the effect of a major pre-Project training initiative targeted at northern Aboriginal residents. In addition, results of quantitative input-output modelling with respect to the economic effects of Project expenditures on the provincial and Canadian economy were reported;
- **Population, Infrastructure and Services:** Quantitative methods were used to characterize the past and present population of the **Local Study Area**. A population projection model was employed to project that population into the future without the Project. Where available, quantitative estimates of the current and future capacities of housing, infrastructure and services were identified; and
- **Community Health and Human Health Risk Assessment:** A key source of information to characterize health status and health issues in the Local Study Area (see Section 1.3.1) were the results of a quantitative analysis of the rates of disease for communities in the Local Study Area. Where possible, these rates were compared to rates of the Burntwood Health Region and to provincial rates. However, these analyses were supplemented with qualitative information about

¹ The BNA (Hydro Projects Management and Allied Hydro Council 2009) is a collective agreement that sets out employment conditions, including hiring preference for northern Aboriginal residents and northern residents, for the construction of, among other projects, any new hydroelectric generating station on the Nelson and Burntwood rivers, including the Wuskwatim and Keeyask generation projects.

health status and health issues obtained from community-based **Key Person Interviews (KPIs)** and workshops. The specific topic of the methylmercury pathway between Gull Lake and Stephens Lake and people in the Local Study Area was addressed through a quantitative human health risk assessment that calculated the risk to women of child-bearing age, other adults and children from eating a range of country food from this area.

Qualitative methods were used in characterizing other aspects of the socio-economic environment and in assessing effects on them. These techniques primarily relied on information from socio-economic fieldwork programs including KPIs, workshops with KCNs Members and community meetings. Each section in this volume discusses the specific methods used to assess the VECs included in that chapter.

It should also be noted that the socio-economic assessment begins with the conclusions of studies of other components of the environment. In particular, conclusions about effects of the Project on the physical and biophysical environment (as described in the Physical Environment Supporting Volume, Aquatic Environment Supporting Volume and Terrestrial Environment Supporting Volume) were carried forward to examine **pathways of effect** to people in such areas as resource economy, health and culture.

As noted earlier in this chapter, ATK was important throughout the EA process. ATK from community studies and the Environmental Evaluation Reports prepared by CNP, YFFN and FLCN were drawn into the SEIA, particularly with respect to effects on the KCNs in the Local Study Area.

1.2.7.3 Uncertainty

Uncertainty in EA is a fact. Predicting the future socio-economic environment with and without the Project has limitations due to uncertainties associated with a variety of reasons – for example:

- Lack of data and limitations of existing data;
- Lack of literature or experience regarding certain types of effects; and
- Differences in data obtained from various sources.

This SEIA addressed uncertainty in the following ways:

- Identified limitations of data sources used in the analysis;
- Identified limitations of analyses undertaken due to lack of data or experience;
- Wherever possible, identified more than one source of information to attempt to gain a deeper understanding of the topic (*e.g.*, **triangulation**). This method was used throughout the SEIA wherever feasible;
- Presented ranges where there was substantial uncertainty, such as an estimate of the number of in-migrants, with valid assumptions for both the lower and upper bounds of the range;

- Presented scenarios showing results under different sets of model assumptions (*e.g.*, construction employment results are presented for different scenarios);
- Identified people and processes capable of mitigating effects. If appropriate processes are in place and relevant people are identified, they may adapt and find solutions to effects; and
- Set out monitoring plans to determine the actual changes that occur with implementation, along with associated follow-up actions to manage effects if they are different than predicted, or if unanticipated effects occur.

1.3 STUDY AREA

The extent to which the Project would have an effect on people depends largely on their proximity to and level of involvement in the Project. Two geographic regions were examined:

- The Socio-Economic Local Study Area; and
- The Socio-Economic Regional Study Area.

Each of these is described below.

1.3.1 Socio-Economic Local Study Area

The Socio-Economic Local Study Area (see Map 1-1) for the SEIA focuses on the four KCNs communities of TCN, WLFN, YFFN and FLCN, which are affected by the Project through the following pathways of effect:

- Physical/biophysical effects on **resource use**/traditional use areas and heritage resources;
- Employment and business effects;
- Construction worker interaction within the partners' home communities; and
- Investment income.

In addition to these partner communities, the Town of Gillam and the City of Thompson are included in the Local Study Area for the following reasons:

- The Town of Gillam is Manitoba Hydro's northern operations base and operational staff would be located in Gillam. Gillam is also home to FLCN Members living both on- and off-reserve;
- Construction worker interaction, since some construction workers are likely to visit Gillam and Thompson and possibly Split Lake during their leisure time;
- Transportation/traffic for construction equipment, materials and people would flow primarily through Thompson, with some via Gillam; and
- The City of Thompson is the regional centre for the Project and as such, can be expected to experience increased expenditures on retail goods and services due to re-spending of wages by the

Project construction workforce. Some commercial and industrial services in Thompson could see increased demand, (e.g., air and freight travel through Thompson). As well, Thompson could receive additional pressure on regional health and social services.

The Local Study Area incorporates the Project site as defined and described in the Project Description Supporting Volume.

1.3.2 Socio-Economic Regional Study Area

Certain Project effects, in particular preferential employment of workers in construction jobs, will extend beyond the Local Study Area and cover all of northern Manitoba. For this reason, the Socio-Economic Regional Study Area has been defined using the boundary identified under Schedule D of the current BNA (see Map 1-2). For the purposes of statistical data collection from **Statistics Canada**, this region encompasses Census Divisions 19, 21, 22 and 23.

According to the 2006 Census of Canada, the population for the Regional Study Area was 84,295. Of this population, about 72 %, or 61,000 people self-identified as being of Aboriginal descent (Statistics Canada 2007a).

The Regional Study Area includes the Churchill-Burntwood-Nelson (CBN) communities identified in the 2009 BNA under the employment hiring preference Zone 1 (see Map 1-2 and Table 1-1).

Table 1-1: Communities within the Churchill-Burntwood-Nelson Region

First Nation Communities	Northern Affairs Communities
Nisichawayasihk Cree Nation	Granville Lake
Tataskweyak Cree Nation	Nelson House
York Factory First Nation	Ilford
Fox Lake Cree Nation	Wabowden
War Lake First Nation	Thicket Portage
Norway House Cree Nation	Pikwitonei
Cross Lake First Nation	Norway House
	Cross Lake
Towns	City
Town of Gillam	City of Thompson
Town of Leaf Rapids	
Churchill	

Source: Hydro Projects Management and Allied Hydro Council 2009.

Communities in the Regional Study Area (including the CBN) are important to examine for the construction employment pathway of effect. However, other pathways of effect are not expected to be substantive enough to warrant the type of extensive, detailed study that was required to support the range of effects in the Local Study Area.

It should be noted that the Project would have economic effects on both Manitoba and Canada, and these effects are included in the SEIA analysis. Economic effects from the Project in the provincial and national economies would include contributions to **Gross Domestic Product** as a result of Project expenditures for products, services and labour; direct Project employment; and government revenues earned through income and sales taxes. This analysis is described in Section 3.4.1.12, Economy of Manitoba and Canada, but these broader study areas are not illustrated here.

1.4 SOURCES OF INFORMATION

Information used in the development of the SEIA was derived from the following main sources:

- Statistical data sources including data obtained from Statistics Canada, Aboriginal Affairs and Northern Development Canada (previously Indian and Northern Affairs Canada, or INAC), Health Canada First Nation and Inuit Health Branch (Health Canada), Manitoba Health and Manitoba Infrastructure and Transportation;
- The KCNs Environmental Evaluation Reports;

- Reports prepared by the KCNs, including community reports and memos that are referenced in this filing. Materials from these documents were used with the permission of each First Nation;
- A program of KPIs examined the environmental setting, identified areas where VECs could potentially be affected by the Project and discussed possible means to mitigate adverse effects. KPIs were conducted with KCNs Members and other residents of the KCNs communities as well as residents of Gillam and Thompson;
- Workshops with targeted groups focused on topics of interest within each of the KCNs communities;
- Historical studies and SEIA literature were reviewed with respect to migration of Aboriginal populations, worker interaction, cost of living methodology, determinants of health and other topics in the personal, family and community life section relevant to the Local Study Area; and
- Previous SEIAs and EISs of other relevant projects, particularly large-scale projects in Canada, were used to:
 - Assist in determining the major sources of effects on the socio-economic environment;
 - Assist in identifying or determining the nature or extent of effects; and
 - Identify possible monitoring and effects management strategies based on those that have been used on other similar projects.

Key project EISs/SEIAs and reports considered as part of this review included the following:

- Wuskwatim Generation Project: Both the Environmental Impact Statement (Manitoba Hydro and NCN 2003) and annual monitoring reports (Wuskwatim Power Limited Partnership 2007, 2008, 2009, 2010);
- Split Lake Cree Post Project Environmental Review: A series of volumes focused on a post-project environmental review of hydro projects in the vicinity of Split Lake as part of planning for potential new hydroelectric projects at Gull and Birthday Rapids (Split Lake Cree – Manitoba Hydro Joint Study Group 1996a, 1996b);
- Lower Churchill Hydroelectric Generation Project: Review of the EIS (Nalcor Energy and Newfoundland and Labrador Hydro 2009) in terms of socio-economic impacts and use of ATK; and Lower Churchill Hydroelectric Generation Project: Report of the Joint Review Panel (Joint Review Panel 2011) for socio-economic recommendations;
- Carmacks-Stewart Transmission Project: Review of the Project Proposal Submission (Yukon Energy Corporation 2006) to the Yukon Environmental and Socio-Economic Assessment Board in terms of socio-economic effects, approach and methodology;
- Eastmain 1-A and Rupert Diversion: Review of the EIS (Hydro-Québec 2004) in terms of socio-economic effects and monitoring, use of ATK, and cumulative effects assessment;

- Mackenzie Valley Gas Project: Review of the EIS (Imperial Oil Resources Ventures Limited, Mackenzie Valley Aboriginal Pipeline Limited Partnership, ConocoPhillips Canada (North) Limited, ExxonMobil Canada Properties, and Shell Canada Limited 2004) in terms of socio-economic effects, baseline studies, approach and methodology, and ATK;
- Snap Lake Diamond Mine (De Beers Canada Inc. 2004)/Diavik Diamond Mine (Diavik Diamond Mines Inc. 1998)/Ekati Mine (BHP Diamonds Inc. 1996): Review of the EISs in terms of socio-economic effects and monitoring, cross-cultural training, and employment, training and business development;
- Kemess North Mine Expansion: Review of the EIS (Northgate Minerals Corporation 2005) in terms of approach and methodology and cumulative effects assessment; and
- Primrose East Expansion: Review of the EIS (Canadian Natural Resources Limited 2006) in terms of personal, family and community life topics within the SEIA and ATK.

1.5 SUMMARY OF PROJECT COMPONENTS RELEVANT TO THE SOCIO-ECONOMIC ENVIRONMENT

1.5.1 Project Components Relevant to Construction-Phase Effects

Project components identified as having the potential to affect the socio-economic environment during the construction phase included the following:

- Physical changes to the land and water that have the potential to affect the health and safety of people;
- Physical changes to the land and water that have the potential to affect heritage resources and the cultural relationships of people to the environment;
- Physical changes that alter the character and appearance of the landscape;
- Project-related changes to terrestrial and aquatic species used by people for domestic or commercial purposes;
- In-migration of construction workers;
- Presence of the main construction camp north of the river and a smaller construction camp south of the river;
- Transportation of equipment, materials and workers to and from the construction site;
- Construction employment opportunities for qualified Aboriginal workers;

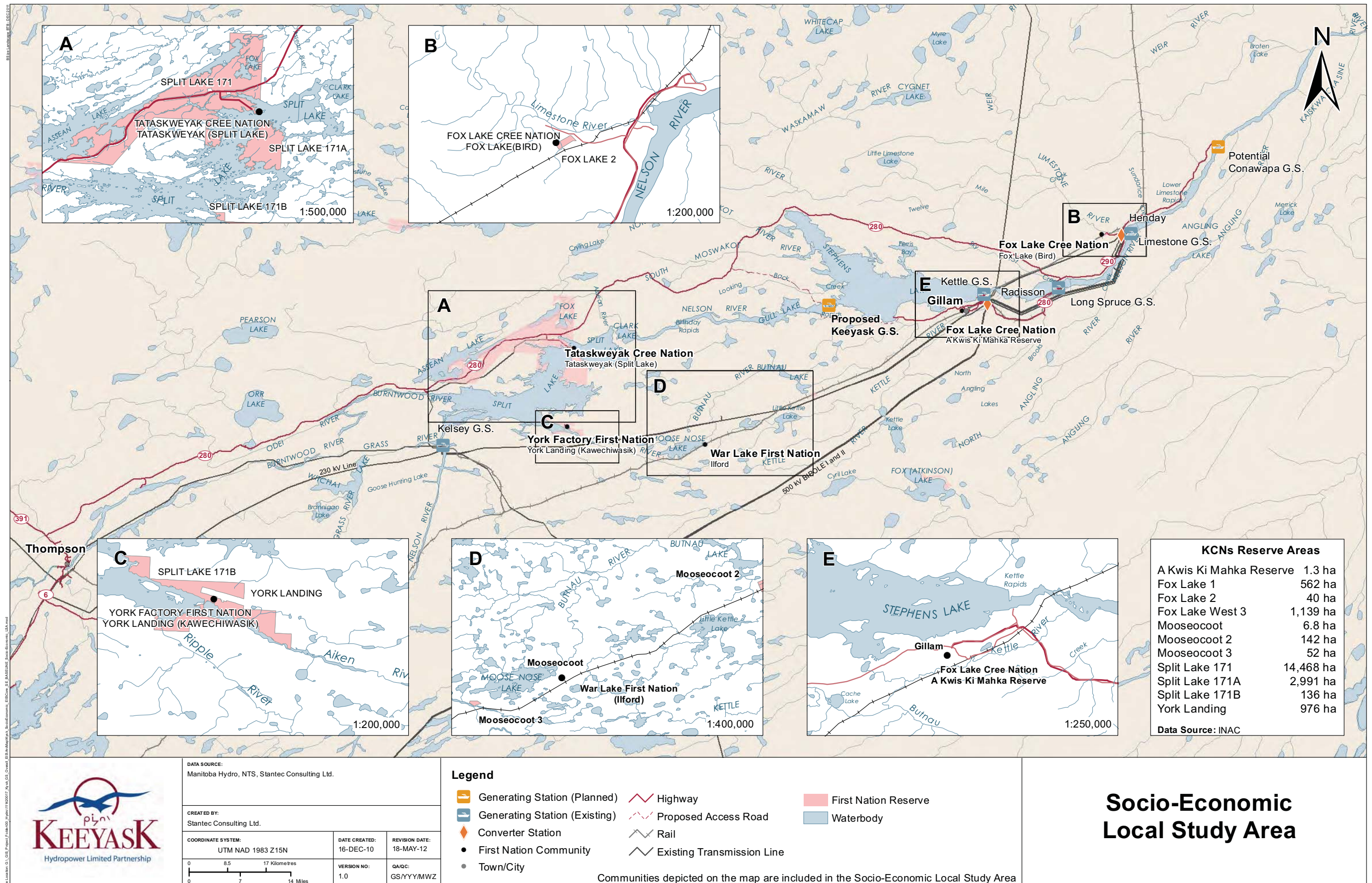
- Construction business opportunities through **Direct-Negotiated Contracts (DNCs)** for KCNs businesses;
- Other construction business opportunities; and
- Opportunities associated with the JKDA and AEAs with TCN, WLFN, YFFN and FLCN.

1.5.2 Project Components Relevant to Operations-Phase Effects

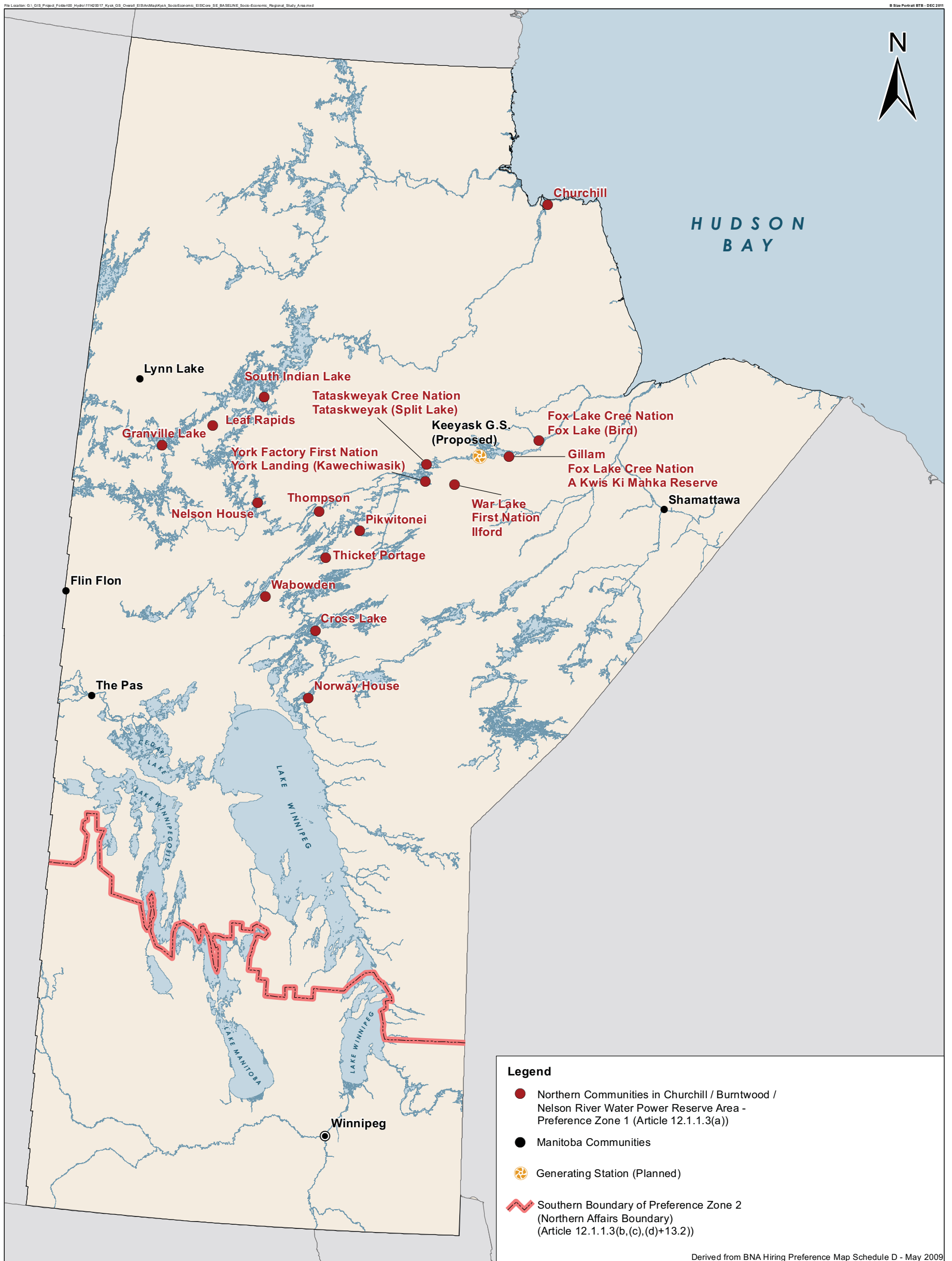
Project components identified as having the potential to affect the socio-economic environment during the operation phase included the following:

- Physical changes to the land and water that have the potential to affect health and safety of people;
- Physical changes to the land and water that have the potential to affect heritage resources and the cultural relationships of people to the environment;
- Physical changes that alter the character and appearance of the landscape;
- Project-related changes to terrestrial and aquatic species used by people for domestic or commercial purposes;
- Operation phase employment opportunities associated with the Project;
- Operations employment opportunities throughout Manitoba Hydro's system associated with JKDA commitments and targets;
- Equity income from the KCNs' participation in the Project;
- Financial payments and implementation of programs associated with the KCNs' AEAs;
- Expansion of the town of Gillam in response to operations-phase employment; and
- Changes to PR 280 along the north access road, across the generating facility and along the south access road into Gillam.

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Legend

- Northern Communities in Churchill / Burntwood / Nelson River Water Power Reserve Area - Preference Zone 1 (Article 12.1.1.3(a))
- Manitoba Communities
- ⚙ Generating Station (Planned)
- 🔴 Southern Boundary of Preference Zone 2 (Northern Affairs Boundary) (Article 12.1.1.3(b),(c),(d)+13.2))

Derived from BNA Hiring Preference Map Schedule D - May 2009



DATA SOURCE: Manitoba Hydro, NTS, Stantec Consulting Ltd., Government of Canada		
CREATED BY: Stantec Consulting Ltd.		
COORDINATE SYSTEM: UTM NAD 1983 Z15N	DATE CREATED: 18-JAN-12	REVISION DATE: 24-MAY-12
0 40 80 Kilometres		VERSION NO: 1.0
0 30 60 Miles		QA/QC: GS/YY/MWZ

Socio-Economic Regional Study Area

Map 1-2

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