Keeyask Generation Project

Scoping Document

Artist's Rendering - Concept Only

KEEYASK

Hydropower Limited Partnership

December 2011

SCOPING DOCUMENT FOR THE ENVIRONMENTAL ASSESSMENT OF THE KEEYASK GENERATION PROJECT

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ATTACHMENTS

1.0 INTRODUCTION TO SCOPING DOCUMENT

1.1 BACKGROUND

This scoping document is intended to assist regulatory authorities in developing guidelines for an environmental assessment of the proposed Keeyask Generation Project (the Project). In doing so, it sets out the framework, nature, scope and extent of the information and analysis being undertaken by the Keeyask Hydropower Limited Partnership (the Partnership) in preparing the environmental impact statement (EIS) for the Project.

Upon receiving guidelines, the Partnership will complete the EIS in accordance with the *Canadian Environmental Assessment Act* and *The Environment Act* (Manitoba). The Partnership anticipates the guidelines will establish the scope of the Project and the scope of the assessment, including the scope of the factors to be considered in the assessment. Through its assessment, in a manner consistent with the guidelines, the Proponent will:

- Identify potential environmental effects of the Project, including the environmental effects of malfunctions or accidents that may occur in conjunction with the Project, and cumulative effects that are likely to result from the Project in combination with other projects or human activities that have been or will be carried out;
- Identify the purpose of the Project;
- Consider comments received from the public;
- Develop technically and economically feasible measures to mitigate adverse environmental effects;
- Evaluate whether the Project, following the application of mitigation measures, is likely to result in significant adverse environmental effects; and furthermore, whether cumulative effects that are likely to result from the Project are significant;
- Consider the capacity of renewable resources that are likely to be significantly affected by the Project to meet the needs of the present and the future; and
- Evaluate whether the Project is consistent with sustainable development.

1.2 THE PROJECT

The Project, should it proceed, will be a 695-megawatt (MW) hydroelectric generating station and associated facilities at Gull (Keeyask) Rapids on the lower Nelson River, immediately upstream of Stephens Lake in northern Manitoba. The nearest communities are Split Lake to the west and Gillam to the east. The renewable hydroelectric energy produced

through the Project will be sold to Manitoba Hydro and integrated into its electric system for use in Manitoba and for export. It is anticipated that the average annual production of electricity will be approximately 4,400 gigawatt (GW) hours.

1.3 THE PROPONENT

The Project proponent is the Keeyask Hydropower Limited Partnership, established pursuant to the Joint Keeyask Development Agreement in May 2009. The Partnership is comprised of four limited partners and one general partner. The four limited partners are Manitoba Hydro, Cree Nation Partners Limited Partnership, York Factory First Nation Limited Partnership, and FLCN Keeyask Investments Inc. The Cree Nation Partners Limited Partnership is controlled by Tataskweyak Cree Nation and War Lake First Nation. The York Factory First Nation Limited Partnership is controlled by York Factory First Nation. FLCN Keeyask Investments Inc. is controlled by Fox Lake Cree Nation. All four communities are referred to in this document as the Keeyask Cree Nations (KCN).

The general partner is 5900345 Manitoba Ltd., a corporation wholly owned by Manitoba Hydro. The general partner is responsible for the management and operation of the business of the Partnership. The Partners are undertaking the environmental assessment and are proceeding with the regulatory process in a collaborative fashion. Contact information for the Keeyask Hydropower Limited Partnership is as follows:

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The EIS will describe the corporate governance structure and identify corporate accountability for management of the Project effects including compliance with regulatory requirements.

1.4 REGULATORY FRAMEWORK

The EIS will describe the scope of the Project, as defined by the Proponent, and the scope of the assessment to meet the requirements of both the federal and provincial (Manitoba) approvals processes. The EIS will identify relevant legislation and regulations with which the Project must comply. The following sections provide an overview of the federal and provincial requirements pertaining to the Project.

1.4.1 *Canadian Environmental Assessment Act*

The Project is a "project" as defined in the *Canadian Environmental Assessment Act*. An environmental assessment is required by the two following triggers under the Law List Regulations: the *Fisheries Act* (Section 35[2]) and *Navigable Waters Protection Act* (Section 5[1][a]).As a hydroelectric generating station with a production capacity of 200 MW or more, it is identified in the Comprehensive Study List Regulations of the *Canadian Environmental Assessment Act*. Selected sections of the *Canadian Environmental Assessment Act* are attached as Attachment A.

1.4.2 *The Environment Act* (Manitoba)

The Project is a "development" as defined in *The Environment Act* (Manitoba). As an electrical generating facility with a generating capacity greater than 100 megawatts, the Project is designated as a Class 3 development in the Classes of Development Regulation pursuant to that act. Selected sections of the Licensing Procedures Regulation are attached as Attachment B.

1.4.3 Regulatory Process Harmonization

As expressed in the Canada-Manitoba Agreement on Environmental Assessment Cooperation (2007), Canada and Manitoba have agreed to carry out a cooperative environmental assessment that will generate the type and quality of information and conclusions on environmental effects required by both orders of government.

2.0 SCOPE OF THE PROJECT

This section of the scoping document sets out information about the Project to be included in the EIS.

In describing the Project, the EIS will include an explanation of the purpose of the Project. In doing so, the EIS will consider the Partnership's market for production from the Project, including requirements for electricity from dependable sources with no or low emissions of greenhouse gases.

The Minister responsible for Manitoba Hydro has indicated the Province of Manitoba will have an independent body undertake a review of the need for and alternatives to (NFAT) major new hydroelectric projects. This will include the Keeyask Generation Project. Manitoba Hydro is also the sole customer of the Partnership; and Manitoba Hydro's market for the power from the Keeyask Generation Project will also be subject to review in the NFAT. As such, the EIS will not include an assessment of Manitoba Hydro's markets, the economic feasibility of the Project, or alternatives to the Project.

While the EIS considers the manner in which certain agreements influence the design criteria, adverse effects programs, and hiring preferences of the Project, the agreements per se are not within the scope of the Project for which regulatory approval is being sought and are not subject to review in the environmental impact assessment. Similarly, each of the KCN has made its own decision to support the Project. While these decisions are also beyond the scope of the environmental assessment of the federal and provincial regulatory processes, the KCN may provide reports explaining their evaluations of the Project to assist other process participants to understand their independent decisions to be Project proponents.

2.1 SITE INFORMATION

The EIS will provide the following information about the site where the Project will be located:

- Site location map or maps at a scale no less than 1:50,000;
- The name of the owner(s) of the land and the mineral rights beneath the land;
- A description of the existing land use on the site and on land adjoining the site; and
- The Proponent's plan for acquiring rights to use the lands required for the Project.

2.2 PROJECT DESCRIPTION/COMPONENTS

The Project will consist of principal structures and supporting infrastructure.

The principal structures consist of a powerhouse complex, spillway, dams and dykes. The powerhouse, including a control building and service bay, will house the equipment required to produce electricity. The spillway will manage surplus water flows, and the dams and dykes will contain the reservoir created upstream of the principal structures.

Supporting infrastructure will consist of permanent facilities that will be used to construct and/or operate the Project and temporary facilities required only to construct the principal structures. Permanent infrastructure includes roads, borrow sources, work camps and work areas, cofferdams and a construction ice boom. Temporary infrastructure includes roads, borrow sources, and boat launches and a portage. The Project includes the operation and decommissioning of certain facilities constructed as part of the Keeyask Infrastructure Project (KIP). Attachment C provides a more detailed list of the Project infrastructure.

The Project will use approximately 18 m of the 27 m of hydraulic head available between Split Lake and Stephens Lake. About 7 m of this drop in elevation occurs through Gull Rapids. The Project will be operated with a maximum reservoir level in the immediate forebay (i.e., full supply level or FSL) of 159 m above sea level (ASL) and a minimum operating level (MOL) of 158 m ASL. Design parameters for the Project are attached in Attachment D.

2.3 ACTIVITIES TO CONSTRUCT, OPERATE AND DECOMMISSION THE PROJECT

The Project will take approximately seven years to construct. It will begin producing power about one and a half years before construction is completed. Once constructed, the Project will be operated as part of the Manitoba Hydro integrated system. Attachment F provides a short explanation of the relationship between the Project and Manitoba Hydro's integrated system.

The EIS will describe the construction and operation of the permanent facilities (the term "operation" also includes maintenance); construction, operation and decommissioning of the temporary facilities (i.e., those required only to construct the Project); operation and decommissioning of the camp and work areas previously licensed and constructed as part of KIP; and operation of the north access road, also licensed and constructed as part of KIP. Given the exceptionally long life of a hydroelectric generating station, it will not be practical to describe in detail the manner in which the Project's permanent facilities will be decommissioned. However, in the event decommissioning is required at some future date,

the EIS will include the Proponent's commitment to comply with legislated and licensing requirements, existing agreements, and industry standards prevalent at that time.

In describing the construction of the Project, the EIS will provide the following information, as these are known at the time that the EIS is developed:

- Characteristics of the Nelson River at the Project site (i.e., flow rates, depth, width and length);
- The size and location of the principal facilities, reservoir, north and south access roads, camp and work areas, construction ice boom, cofferdams, and facilities to assist with navigational safety; the location and maximum size of borrow areas; and sites where unclassified excavated material will be placed;
- The proposed date of commencement of construction, a schedule of activities to be undertaken each year, a general description of construction methods (e.g., use of cofferdams and construction ice boom[s]), and the proposed date when construction is expected to be completed;
- A calculation of the area of land required for construction of the Project;
- A description of atmospheric emissions, liquid emissions, and solid wastes, and plans to manage these emissions and wastes during construction;
- A description of i) fuel and dangerous and hazardous products and wastes and ii) plans to manage the fuel, products and wastes during construction; and
- A description of personnel requirements during construction.

In describing the operation of the Project, the EIS will provide the following information, as these are known at the time the EIS is developed:

- The proposed date of commencement of operations;
- The mode of operation;
- The calculated open-water hydraulic zone of influence;
- A description of facilities to assist with navigation and navigational safety;
- A description of: i) atmospheric emissions, liquid emissions and solid wastes; and ii) plans to manage these emissions and wastes during operations;
- A description of: i) fuel and of dangerous and hazardous products and wastes: and ii) plans to manage the fuel, products and wastes during operations; and
- A description of personnel requirements during operations.

2.4 ACCIDENTS AND MALFUNCTIONS

The EIS will identify and describe potential accidents and malfunctions related to the Project, potential environmental effects of such accidents and malfunctions, and measures to prevent and to respond to any such occurrence, such as its environmental management system and safety, health and emergency response plans. The discussion will focus on the following potential occurrences:

- Cofferdam failure;
- Dam failure;
- Fires; and
- Spills of chemicals and hazardous materials on-site.

2.5 ALTERNATIVE MEANS OF CARRYING OUT THE PROJECT

The EIS will include a discussion of alternative means of carrying out the Project that are technically and economically feasible and the environmental effects of any such alternative means. The discussion will present the alternative scenarios identified, provide an overview of potential environmental effects of the options, and explain the selection of the chosen option. The discussion of alternatives means of carrying out the Project will consider the following:

- General arrangement of the generating station, including:
  - Location;
  - Reservoir (forebay) elevations; and
  - Production capacity;
- Size of the generating station;
- Number and types of turbines;
- Reservoir preparation (i.e., clearing) and waterways management;
- Fish passage;
- Location (siting) of the south access road;
- Number, size and selection of borrow sites;
- Number, size and selection of placement areas for excavated materials;

- Location of accommodation for the construction work force;
- Portage and boat launch location; and
- Mode of operation.

2.6 MITIGATION AND OFFSET PROGRAMS PRE-DETERMINED BY THE PARTNERS

Programs have been developed to provide appropriate replacements, substitutions or opportunities to offset adverse effects of the Project on each Keeyask Cree Nation. These programs are as follows:

- For Tataskweyak Cree Nation: Keeyask Centre, Access Program, Land Stewardship Program, Healthy Food Fish Program, Traditional Lifestyle Experience Program, Traditional Knowledge Learning Program, Cree Language Program, Traditional Foods Program, and Museum and Oral Histories Program;
- For War Lake First Nation: Distribution Centre, Community Fish Program, Improved Access Program, Traditional Learning/Lifestyle Program, Cree Language Program, and Museum and Oral Histories Program;
- For York Factory First Nation: Resource Access and Use Program, Environmental Stewardship Program, and Cultural Sustainability Program; and
- For Fox Lake Cree Nation: Gathering Centre, Youth Wilderness Traditions Program, Cree Language Program, Gravesite Restoration Program, Alternative Justice Program, Crisis Centre and Wellness Counselling Program, Lateral Violence and 'Where Do We Go From Here' Program, and Alternative Resource Use Program.

These programs will be described and considered in the environmental assessment.

3.0 ASSESSMENT INFORMATION AND METHODOLOGY

This section of the scoping document sets out information about the assessment methodologies to be applied in the preparation of the EIS.

3.1 MAJOR AGREEMENTS LEADING TO THE PARTNERSHIP AND PROJECT

Elements of the following agreements have guided the Partnership in the development of plans for the Project:

- The Joint Keeyask Development Agreement, which provides for the Partnership, prescribes certain design criteria for the Project. These criteria are integrated into the description of the Project for which regulatory approval is being sought.
- Agreements with each of the Keeyask Cree Nations provide for programs and residual compensation to address Project adverse effects (subject to specific exceptions referenced in the agreements) on each of the communities. These programs will be described and considered in the environmental assessment of the Project.
- The Burntwood-Nelson Agreement between the Hydro Projects Management Association and the Allied Hydro Council of Manitoba contains criteria by which different groups will receive hiring preferences on the Project. These hiring preferences will also be described and considered in the environmental assessment of the Project.

While the EIS will consider the manner in which the design criteria, adverse effects programs, and hiring preferences influence and mitigate the effects of the Project, the agreements per se are not within the scope of the Project for which regulatory approval is being sought and are not subject to review in the environmental impact assessment.

Each of the communities led consultations with their respective members to determine and present their own evaluations based on their own worldview of the environmental effects of the Project on their communities; and each of the KCN has made its own decision to support the Project. These decisions are beyond the scope of the environmental assessment of the federal and provincial regulatory processes. The KCN may provide reports explaining their evaluations of the Project to assist other process participants to understand their independent decisions to be Project proponents.

3.2 ATK, LOCAL KNOWLEDGE AND TECHNICAL SOURCES

The Partners have agreed the planning and environmental assessment of the Project will incorporate and reflect both Aboriginal traditional knowledge, including the Cree worldview, and technical sciences.

The EIS will use the following sources of information in the environmental assessment: Aboriginal traditional knowledge (ATK), local knowledge (including information from the public involvement program), and technical sources (e.g., engineering and scientific studies and analyses undertaken by the Proponent, articles in peer-reviewed journals and "grey" literature [i.e., not published in peer-reviewed journals], and existing government databases).

The EIS will provide a list of studies undertaken by the Proponent and relied upon for the purposes of the environmental assessment. The EIS will also provide citations for other relevant studies used in the assessment.

The Proponent will consult with appropriate authorities if sensitive information (e.g., location of caribou calving and community-specific health reports) needs to be kept confidential. Aboriginal communities may also identify certain ATK as being sensitive and/or proprietary to the communities.

3.3 CONSULTATION AND INVOLVEMENT PROGRAM

3.3.1 Public Involvement – Aboriginal People

The EIS will describe the consultation and involvement processes with the Keeyask Cree Nations (KCN), other First Nations, and Metis related to the environmental assessment. In doing so, as noted in section 3.1, the KCN may provide reports explaining their evaluations of the Project to assist other process participants to understand their independent decisions to be Project proponents.

In describing the consultation and involvement processes, the EIS will provide the following:

- Community contacts information;
- The use of communication tools employed to provide and/or collect information, including newsletters, radio and television broadcasts, open houses, community meetings, and other forums;

- A list of factors suggested by the First Nations and Metis for inclusion in the EIS, whether or not the factors were included, and the rationale for exclusions;
- A description of traditional territory, as provided by the parties;
- Based on information provided by the parties, the manner in which the respective parties currently make use of areas potentially affected by the Project (e.g., for hunting, fishing, trapping, or harvesting of other resources, access to sacred sites or burial grounds or similarly traditional uses);
- Potential adverse effects to these activities that the Project may cause; and
- Proposed measures to avoid, mitigate and/or monitor these potential effects.

3.3.2 Public Involvement – Other Publics

In addition to the involvement of First Nation and Metis, the EIS will describe the involvement of other publics in the environmental assessment. Generally, the public will include local residents (other than those who are First Nation and Metis); community groups; environmental groups; the private sector; municipal governments; and the general public. The EIS will describe the following:

- The use of communication tools to provide and collect information, including newsletters, radio and television broadcasts, open houses, community meetings, and other forums; and
- Proposed measures to avoid, mitigate and/or monitor potential effects identified by the public.

3.4 VALUED ENVIRONMENTAL COMPONENTS

Valued environmental components (VECs) will be selected to focus the assessment of the significance of adverse effects. Selection of VECs will be based on the following criteria:

- Overall importance/value to people;
- Key for ecosystem function;
- Umbrella indicators;
- Amenable to scientific study in terms of the analysis of existing and post-construction conditions;
- Potential for substantial Project effects; and

- Regulatory requirements.

The EIS will explain the rationale for the selection of each VEC.

3.4.1 VECs for the Cumulative Effects Assessment

The cumulative effects assessment will utilize a subset of VECs studied throughout the environmental assessment. This subset will include any VEC, as set out in 3.4, for which it is determined that there may be a negative residual effect.

The EIS will describe the approach and methods used to identify and assess the cumulative effects and will provide a record of assumptions and analyses that support the conclusions, including the level of confidence in the data used in the analysis.

3.5 SPATIAL AND TEMPORAL BOUNDARIES

Spatial boundaries (i.e., the study areas) will be established for the Project effects assessment. Study areas may vary between various environmental components, as appropriate. The EIS will explain the rationale used to determine the study area for various environmental components.

Temporal boundaries will also be established for the effects assessment. Temporal boundaries may vary between various environmental components and the different phases of the Project (i.e., construction, operation and decommissioning).

The EIS will describe the predicted future environmental conditions and trends if the Project were not to proceed. The predicted future condition of the environment will help to distinguish Project-related effects from effects not attributable to the Project.

As with the Project effects assessment, the EIS will present a justification of the spatial and temporal boundaries of the cumulative effects assessment. The boundaries may vary, depending on the particular VEC being assessed. Generally the boundaries will be broader than in the corresponding effects assessment.

3.6 CLIMATE CHANGE

The EIS will provide a sensitivity analysis on the effects of the assessment conclusions that considers the potential effects that increased temperatures may have on future surface water and ice regimes on the lower Nelson River. The sensitivity analysis will consider a temporal range (e.g., in 2020, 2050 and 2080) and a range of potential changes in river flows (e.g., +/-10% across all percentiles).

3.7 PRECAUTIONARY APPROACH

The EIS will demonstrate that the proposed Project has been examined in a careful and precautionary manner. It will outline the conclusions made about the effects of the proposed Project on the environment and will describe the approaches to minimize adverse effects. Where conclusions drawn from ATK, local knowledge and technical sources differ from each other, the EIS will present the various points of view and the Proponent's conclusion(s) (which may include a commitment for further monitoring). In addition to this monitoring, the EIS will identify other monitoring and follow-up activities where they are merited (e.g., where the effectiveness of proposed mitigation measures merits monitoring and follow-up activities).

A description of limitations in the information will be reported. The relevance of these limitations to the assessment and manner in which these limitations are (or will be) addressed (e.g., through monitoring and adaptive management) will also be discussed.

4.0 ENVIRONMENTAL SETTING

This section of the scoping document sets out information about the environmental setting to be included in the EIS.

The EIS will provide a description of the existing environmental setting of the study area to provide context for an understanding of the potential effects of the Project. The EIS will also describe trends and conditions in the current environmental setting. Information on the environmental setting will be organized into the following broad topics:

- Biophysical environment (i.e., physical, aquatic and terrestrial); and
- Socio-economic environment (including resource use and heritage resources).

The following section provides a description of the components of the existing environment to be covered in the EIS.

4.1 BIOPHYSICAL ENVIRONMENT

4.1.1 Physical Environment

4.1.1.1 Atmosphere

The EIS will describe the following attributes in the relevant study area(s):

- Precipitation, temperature, and wind speed/direction;
- Trends in climate change;
- Existing air quality and sources of air contaminants; and
- Existing ambient noise level.

4.1.1.2 Land

- The EIS will describe the following attributes in the relevant study area(s):
- Local and regional physiography, geology and soil;
- Physical and chemical properties of rock and borrow material sources;
- Permafrost conditions;
- Regional seismicity and seismic activity;

- Shoreline conditions and the rate of shoreline erosion and recession;
- Peatland disintegration along shorelines and inland areas; and
- Shoreline debris.

4.1.1.3 Surface Water and Groundwater

The EIS will describe the following attributes in the relevant study area(s):

- Hydrology and spatial extent of the local and regional watersheds in the Split Lake to Gull Rapids reach;
- Existing water regime and conditions;
- Existing range of flows and water levels in the context of the operation of the Churchill River Diversion (CRD) and Lake Winnipeg Regulation (LWR);
- Longitudinal profiles of water levels and bathymetry of the Nelson River from the outlet of Split Lake to the inlet to Stephens Lake;
- Ice conditions, including changes during the winter and variability from year to year;
- Dissolved oxygen and temperature conditions;
- Groundwater movement, levels and regime; and
- Nature and extent of suspended sediment transport and deposition.

4.1.2 Aquatic Environment

4.1.2.1 Aquatic Ecosystems and Habitat

Water Quality and Sediment Quality

The EIS will describe the following attributes in the applicable study area(s):

- Concentrations of water and sediment quality parameters that affect the suitability of the environment for aquatic life;
- Seasonal variations in water quality; and
- Parameters that affect the suitability of water for other uses (e.g., recreation).

Aquatic Habitat

The EIS will describe the following attributes in the applicable study area(s):

- Aquatic habitat based on water depth, velocity, substratum, and presence of cover (e.g., aquatic macrophytes);
- Aquatic habitat classified into categories relevant to use by aquatic biota; and
- Quantification of existing habitat, including description of changes due to seasonal and year-to-year variation in water flows.

4.1.2.2 Algae and Aquatic Plants

The EIS will describe the following attributes in the applicable study area(s):

- Species composition and biomass of phytoplankton, including seasonal changes and relation to characteristics of the waterbody;
- Distribution of attached algae in relation to habitat; and
- Species composition and distribution of aquatic macrophytes, in relation to habitat.

4.1.2.3 Aquatic Invertebrates

The EIS will describe the following attributes in the applicable study area(s):

- Species composition and abundance of zooplankton, including seasonal changes and relation to characteristics of the waterbody; and
- Species composition and abundance of benthic invertebrates, in relation to habitat.

4.1.2.4 Fish

The EIS will describe the following attributes in the applicable study area(s):

- Species composition and relative abundance;
- Life history parameters, including spawning and feeding biology;
- Habitat use; and
- Short-term and long-term patterns of fish movements between and within waterbodies, including spawning migrations and movements over habitat potentially affected by the Project.

4.1.2.5 Mercury Concentrations and Other Characteristics of Fish Quality

The EIS will describe the following attributes in the applicable study area(s):

- Mercury levels for key domestic and commercial fish species (e.g., walleye, northern pike, and lake whitefish);
- Other characteristics of fish quality that affect the commercial sale of fish; and
- The taste, texture, and palatability of fish species (e.g., walleye, northern pike, and lake whitefish) utilized by local Aboriginal people (e.g., KCN members).

4.1.3 Terrestrial Environment

4.1.3.1 Terrestrial Ecosystems and Habitat

Soil Quantity and Quality

The EIS will describe the following attributes in the applicable study area(s):

- Distribution and abundance of soil types classified into soil quality categories; and
- Parameters that affect the suitability of soils to perform ecosystem functions (e.g., primary productivity).

Terrestrial Habitat

The EIS will describe the following attributes in the applicable study area(s):

- Terrestrial habitat based on vegetation, site conditions, groundwater depth, surface water depth, permafrost, topography and disturbance or instability regime;
- Terrestrial habitat classified into upland and wetland categories relevant to use by terrestrial biota; and
- Quantification of existing habitat, including description of changes due to temporal variations in water levels and flows, historical human impacts, vegetation succession and large fires.

Fire Regime

The EIS will describe the following attributes in the applicable study area(s):

- Fire history; and
- Fire regime parameters relevant for vegetation, wildlife and ecosystem functions.

Ecosystem Diversity

The EIS will describe the following attributes in the applicable study area(s):

- Distribution and abundance of stand and landscape level ecosystem types; and
- Distribution, abundance and environmental associations of ecosystem types requiring special consideration such as rare or highly diverse types.

Wetland Function

The EIS will describe the following attributes in the applicable study area(s):

- Distribution, abundance and environmental associations of wetland types making disproportionately high contributions to wetland function such as highly productive types or types that provide high quality habitat for waterfowl or aquatic furbearers; and
- Parameters that affect wetland functions.

Carbon Storage

The EIS will describe the following attributes in the applicable study area(s):

- Carbon stored in terrestrial vegetation and soils; and
- Parameters that affect the ability of vegetation and soils to store carbon.

Intactness

The EIS will describe the following attributes in the applicable study area(s):

- Fragmentation resulting from human linear features and other human footprints;
- Distribution of linear features by feature type; and
- Distribution and abundance of core areas.

4.1.3.2 Terrestrial Plants

The EIS will describe the following attributes in the applicable study area(s):

- Species composition, distribution and relative abundance of vascular plants, in relation to habitat;
- Species composition, distribution and relative abundance of the common ground mosses and lichens, in relation to habitat; and
- Distribution, abundance and habitat associations of invasive plant species.

4.1.3.3 Terrestrial Invertebrates

The EIS will describe the following attributes in the applicable study area(s):

- Species composition and habitat associations of terrestrial invertebrates (e.g., worms, snails, spiders, insects).

4.1.3.4 Amphibians and Reptiles

The EIS will describe the following attributes in the applicable study area(s):

- Species composition and distribution of amphibians;
- Habitat associations and seasonal use by amphibians; and
- Species and presence of reptiles (if applicable).

4.1.3.5 Birds

The EIS will describe the following attributes in the applicable study area(s):

- Species composition, distribution and relative abundance of songbirds, raptors, upland gamebirds and waterbirds, in relation to habitat including seasonal changes.

4.1.3.6 Mammals

The EIS will describe the following attributes in the applicable study area(s):

- Species composition, distribution and relative abundance of small mammals, furbearers, large carnivores and ungulates, in relation to habitat including seasonal changes.

4.1.3.7 Mercury in Wildlife

The EIS will describe the following attributes in the applicable study area(s):

- Mercury levels for key bird species (e.g., Canada goose, mallard); and
- Mercury levels for key mammal species (e.g., beaver, muskrat, otter and mink).

4.1.4 Species of Conservation Concern

The EIS will identify plants and animals named under the *Species at Risk Act* (Canada) and/or *The Endangered Species Act* (Manitoba), listed by the Committee on the Status of Endangered

Wildlife in Canada (COSEWIC), and identified as S1 and S2 species by the Manitoba Conservation Data Centre.

4.2 SOCIO-ECONOMIC ENVIRONMENT

4.2.1 Economy

The EIS will describe the following attributes in the relevant study area(s):

- The Manitoba and Canadian economies, including GDP and employment (i.e., person years and income);
- The regional economy, in particular local Aboriginal and non-Aboriginal communities and the regional centre, with an emphasis on the labour force, employment, unemployment, income, and education and training, and with a profile of local business capacity (e.g., goods and services);
- A profile of key resource use sectors potentially affected by the Project (see Land and Resource Use), with an emphasis on the commercial sectors; and
- Cost of living.

4.2.2 Population, Infrastructure and Services

- The EIS will describe the following attributes in the relevant study area(s):
- Existing population distribution and demographics;
- Existing infrastructure and services of Aboriginal and other in-vicinity communities, including:
    - Housing/accommodation supply;
    - Water and sewer infrastructure;
    - Transportation infrastructure;
    - Education;
    - Emergency services;
    - Social services; and
    - Public health infrastructure and health and social services that may be relied upon during Project construction and operation.

4.2.3 Personal, Family and Community Life

The EIS will describe the following attributes in the relevant study area(s):

- Public safety;
- Travel, access and safety;
- Aesthetics;
- Health status and health issues (to include methylmercury contamination in country food);
- Culture and spirituality; and
- Governance, goals and plans.

4.2.4 Land and Resource Use

In describing the socio-economic environment, the EIS will focus on the following land and resource use attributes in the relevant study area:

- Description of lands including:
  - Land acquisition focusing on Crown land requirements and private land acquisition requirements for the Project;
  - Description of Reserve lands and Treaty Land Entitlement; and
  - Lands with special designation (proposed and existing), focusing on the following:
    - Federal and Provincial park lands;
    - Wildlife Management Areas;
    - Areas of Special Interest (Manitoba Protected Areas Initiative);
    - Ecological Reserve lands; and
    - Scientific sites.
- Based on information provided by Aboriginal groups or, if Aboriginal groups do not provided this information, on available information from other sources, a description of the following:
  - Current and proposed uses of land and resources by Aboriginal groups for traditional purposes, i.e., hunting, fishing, trapping, cultural and other traditional uses of the land (e.g., collection of medicinal plants and uses of sacred sites); and
  - Access into the area by Aboriginal people.

- Description of commercial resource use and lands including:
  - Commercial use of resources by Aboriginal and non-Aboriginal groups, focusing on the following:
    - Commercial fishing;
    - Commercial trapping;
    - Resource tourism including lodge and outfitting operations and eco-tourism;
    - Commercial mining activities, leases, licenses and lands; and
    - Forestry and forested lands.
- Description of recreational resource use including:
  - Use of lands and waters by non-Aboriginal peoples for the purposes of sports fishing, hunting, recreational cabin uses and associated travel routes and travel safety concerns.

4.2.5 Heritage Resources

The EIS will focus on the following heritage resources in the relevant study area(s):

- Historical land use and occupancy;
- Archaeological sites and culturally important sites, focusing on shoreline sites that could potentially be affected by erosion;
- Location of known and potential burial sites (if any); and
- Structures, sites or things of historical, archaeological, paleontological or architectural significance that will be affected by the Project.

5.0 ASSESSMENT OF ENVIRONMENTAL EFFECTS

This section of the scoping document sets out information about the assessment of potential effects of the Project on the environment.

5.1 PROJECT EFFECTS

Based on the description of the Project (as set out in section 2) and the existing environment (as set out in section 4.0), the EIS will identify the effects of the Project on the environment. As noted in section 3.4, the EIS will also describe the predicted future environmental conditions and trends if the Project were not to proceed, which will help to distinguish Project-related effects from effects not attributable to the Project.

The EIS will identify the potential positive and adverse environmental effects of the Project. Measures to mitigate potential effects that are technically and economically feasible will be identified. Potential effects that remain after the application of mitigation measures will be considered to be potential residual effects. The potential effects of climate change (as described in section 3.3) on potential residual effects on each VEC will be discussed in the EIS. The assessment of Project effects will conclude with a determination of the significance of potential residual adverse environmental effects on each VEC. In reporting on the assessment of potential environmental effects, the EIS will describe the approach and methods used to identify and assess the effects, and it will also provide a record of assumptions and analyses that support the conclusions.

5.1.1 Criteria for Determining Significance

The following criteria will be used to determine the significance of residual adverse environmental effects on each VEC:

- Nature (i.e., positive or negative) of the effect;
- Magnitude (i.e., severity) of the effect;
- Temporal boundaries (i.e., duration); and
- Spatial boundaries (i.e., geographic extent).

In assessing the significance of environmental effects on a VEC, the EIS may also discuss the frequency of effects, ecological context and the reversibility, where relevant. The EIS

may also discuss the likelihood of the effect occurring and the certainty/uncertainty (i.e., level of confidence) of the analysis/prediction.

If it is determined that the Project will likely cause a significant adverse effect on a VEC(s) that is a renewable resource, the EIS will further consider the capacity of the VECs to meet the needs of the present and those of the future.

5.2 CUMULATIVE EFFECTS

The EIS will also describe the cumulative environmental effects that are likely to result from the Project in combination with other projects or human activities, as listed in Attachment E, that have been or will be carried out; and, after considering proposed mitigation and using the criteria in section 5.1.1, the EIS will determine if any such residual effects of the Project are significant. The cumulative effects assessment will focus on VECs (as described in section 3.3.1) that may be adversely affected by the Project and will consider likely adverse effects caused by the other projects or human activities that overlap in time and space with those of the Project.

6.0 SUSTAINABLE DEVELOPMENT

The EIS will provide conclusions, and rationale for the conclusions, about the Project from the perspectives of sustainability and sustainable development consistent with the federal Sustainable Development Strategy, Manitoba Principles and Guidelines of Sustainable Development pursuant to *The Sustainable Development Act* (Manitoba), the KCN Principles regarding Respect for the Land (pursuant to the Joint Keeyask Development Agreement), and the Manitoba Hydro Sustainable Development Policy and Principles.

In examining the matter of sustainable development, the EIS will consider the balance of positive and negative social, economic and environmental effects that may arise from the Project.

7.0 ENVIRONMENTAL MONITORING, MANAGEMENT AND FOLLOW-UP

This section of the scoping document sets out information about the monitoring, management and follow-up programs to be included in the EIS.

The EIS will describe a preliminary outline of an environmental protection program for monitoring and managing the effects of the Project on the biophysical and socio-economic environments arising from the construction, operation, and decommissioning of the Project. The program will consist of environmental protection plans, management plans, emergency response plans and monitoring plans. The plans will be finalized once regulatory requirements are known, following the issuance of regulatory approvals with their Project-specific terms and conditions. The plans will be finalized incrementally to address relevant stages of construction and operation of the Project.

The monitoring programs will determine effects of the Project, including: whether they are consistent with the analysis in the environmental impact assessment; whether they assess the effectiveness of remedial measures; and whether they allow for adaptive management and mitigation measures to be implemented if unforeseen impacts occur.

- To facilitate the avoidance and mitigation of environmental effects during the construction, operation and decommissioning of the Project by providing field construction and operating personnel with clear instructions on the mitigation measures to be implemented and on the appropriate lines of communication and means of reporting to be followed;
- To incorporate terms and conditions set out in licences and approvals for the Project;
- To address relevant issues and concerns identified by KCN, other Aboriginal groups and other stakeholders; and
- To identify the role of KCN in implementing the plans.

Monitoring will use Aboriginal traditional knowledge and technical science.

The plans will also commit the Proponent to reporting requirements.

8.0 FORMAT OF THE EIS

This section of the scoping document sets out information about the format of the EIS.

The EIS will consist of a primary core volume, an executive summary, a video and supporting volumes. The core volume, executive summary, and video will contain information required to meet the requirements of the guidelines. A table of concordance will cross reference requirements of the guidelines with information in the core volume. The video will provide information that helps to express the approach of the Keeyask Cree Nations and Manitoba Hydro in undertaking the Project. The executive summary will summarize the information in the core document and video. The supporting volumes will contain a more expansive and detailed evaluation of the Project by the Keeyask Cree Nations and the Manitoba Hydro environmental management team.

The EIS will use charts, diagrams and maps to clarify information in the text.

To facilitate the identification of the documents and their coding in public registries, the title page of the EIS will contain the name and location of the Project, the title of the document (including the term "environmental impact statement"), subtitle, name of the proponent, and date in month and year.

The EIS will be provided to regulatory authorities in printed and electronic form.

ATTACHMENT A

SECTIONS 16(1) AND 16(2) OF THE *CANADIAN ENVIRONMENTAL ASSESSMENT ACT*

Attachment A: Sections 16(1) and 16(2) of the *Canadian Environmental Assessment Act*

Sections 16(1)(a) to (e), Section 16(2)(a) to (d) and Section 16(3)(a) and (b) of this act set out factors that must be considered in every comprehensive study or panel review, as follows:

16.(1) Every screening or comprehensive study of a project and every mediation or assessment by a review panel shall include a consideration of the following factors:

(a) the environmental effects of the project, including the environmental effects of malfunctions or accidents that may occur in connection with the project and any cumulative environmental effects that are likely to result from the project in combination with other projects or activities that have been or will be carried out;

(b) the significance of the effects referred to in paragraph (a);

(c) comments from the public that are received in accordance with this Act and the regulations;

(d) measures that are technically and economically feasible and that would mitigate any significant adverse environmental effects of the project; and

(e) any other matter relevant to the screening, comprehensive study, mediation or assessment by a review panel, such as the need for the project and alternatives to the project, that the responsible authority or, except in the case of a screening, the Minister after consulting with the responsible authority, may require to be considered.

(2) In addition to the factors set out in subsection (1), every comprehensive study of a project and every mediation or assessment by a review panel shall include a consideration of the following factors:

(a) the purpose of the project;

(b) alternative means of carrying out the project that are technically and economically feasible and the environmental effects of any such alternative means;

(c) the need for, and the requirements of, any follow-up program in respect of the project; and

(d) the capacity of renewable resources that are likely to be significantly affected by the project to meet the needs of the present and those of the future.

(3) The scope of the factors to be taken into consideration pursuant to paragraphs (1)(a), (b) and (d) and (2)(b), (c) and (d) shall be determined

(a) by the responsible authority; or

(b) where a project is referred to a mediator or a review panel, by the Minister, after consulting with the responsible authority, when fixing the terms of reference of the mediation or review panel.

ATTACHMENT B

SECTIONS 1(1) AND 1(2) OF THE LICENSING PROCEDURES REGULATION (MANITOBA)

Attachment B: Sections 1(1) and 1(2) of the Licensing Procedures Regulation (Manitoba)

Sections 1(1) and 1(2) of the Licensing Procedures Regulation, established under *The Environment Act* (Manitoba), sets the information required for a proposal being submitted by a proponent, as follows:

1(1) For the purposes of subsections 10(3), 11(7) and 12(3) of the Act, a proposal for a Class 1, Class 2 or Class 3 development shall contain the following information:

(a) where the location of the proposed development has been determined, a certificate of title showing the legal description, or in the case of highways, rail lines, electrical transmission lines, or pipelines, a map or maps at a scale no less than 1:50,000 showing the location of the proposed development;

(b) the name of the proponent of the development;

(c) the name of the owner of the land upon which the development is intended to be constructed;

(d) the name of the owner of mineral rights beneath the land if not the same as that of the surface owner;

(e) a description of the existing land use on the site and on land adjoining the site, as well as a description of changes that will be made in such land use for the purposes of the development;

(f) the land use designation for the site and adjoining land as identified in a development plan adopted under The Planning Act or The City of Winnipeg Act and the zoning designation as identified in a zoning by-law, if applicable;

(g) a description of the proposed development and the method of operation including hours of operation;

(h) the proposed date of commencement of construction, commencement of operation including staging of the development, and termination of operation, if known;

(i) a description of all previous studies and activities relating to feasibility, exploration, or project siting and prior authorization received from other government agencies;

(j) a description of the potential impacts of the development on the environment, including, but not necessarily limited to the following:

(i) type, quantity and concentration of pollutants to be released into the air, water or land,

(ii) impact on wildlife,

(iii) impact on fisheries,

(iv) impact on surface water and groundwater,

(v) forestry related impacts,

(vi) impact on heritage resources,

(vii) socio-economic implications resulting from the environmental impacts;

(k) a description of the proposed environmental management practices to be employed to prevent or mitigate adverse implications from the impacts identified in clause (j) having regard to, where applicable: containment, handling, monitoring, storage, treatment and final disposal of pollutants; conservation and protection of natural or heritage resources; environmental restoration and rehabilitation of the site upon decommissioning; and protect ion of environmental health; and

(l) any other information requested by the director.

Section 2 of the regulation enables the Director to waive any requirements of Section 1 where he or she considers the requirements are not applicable to a proposal or that is otherwise appropriate to do so.

ATTACHMENT C

PROJECT INFRASTRUCTURE

Attachment C: Project Infrastructure

The Keeyask Generation Project (the Project) involves the operation of the following permanent infrastructure constructed as part of the Keeyask Infrastructure Project (KIP):

- North access road, including a clear-span bridge over Looking Back Creek and an upgrade at the intersection of the road.

The Project also involves the operation and decommissioning of the following temporary infrastructure constructed as part of KIP:

- A security gatehouse with space for vehicle turnaround on the north access road;
- A 12-m communication tower;
- A main camp near Gull Rapids with the following facilities:
  - Accommodations for 500 people;
  - Potable water supply and treatment;
  - Wastewater treatment;
  - Power supply (diesel generators);
  - Kitchen facilities;
  - Dining hall;
  - Recreational facilities;
  - Offices;
  - Helicopter pad;
  - Fire and first-aid vehicle garage structures;
  - Contractor work areas;
  - Manitoba Hydro work area; and
  - Borrow areas (with associated access roads).

The Project also involves the construction, operation and decommissioning of the following temporary infrastructure:

- Expansion of camp facilities to accommodate an additional 1,500 people (bringing total camp capacity to 2000 people);
- Landfill;
- Explosives magazine;

- Camp for approximately 100 people to facilitate construction of the south access road;
- Temporary borrow sources (with associated access roads, as well as water crossings to borrow areas G-3 and N-5);
- Temporary cofferdams;
- Temporary rock groins;
- Construction ice boom; and
- Temporary safety and security facilities/equipment.

The Project also involves the construction and operation of the following permanent infrastructure:

- South access road;
- Boat launches and portage;
- Selected safety and security facilities/equipment such as a safety boom, signage and buoys;
- Communication tower;
- Storage buildings;
- Disposal sites for excess excavated material;
- Permanent borrow sources (with associated access roads);
- Spur for a transmission tower;
- Permanent rock groins;
- Cofferdams impounded in the forebay; and
- Cofferdams integrated into other permanent structures.

Permanent principal structures constructed and operated as part of the Project are the following:

- Powerhouse complex;
- Spillway;
- Dams; and
- Dykes.

A reservoir will be created upstream of the principal structures.

ATTACHMENT D

KEEYASK GENERATING STATION DESIGN PARAMETERS

Table D-1: Keeyask Generating Station Design Parameters

Parameter	Value
Full Supply Level (FSL)	159 m ASL
Minimum Operating Level (MOL)	158 m ASL
Initial Reservoir Area	93.1 km^2
Live Reservoir Storage (storage between MOL and FSL)	81.4 million m^3
Full Gate Discharge with Stephens Lake at 141.12*	4,000 m^3/s
Full Gate Discharge with Stephens Lake at 139.6 m	4,100 m^3/s
Best Gate Discharge with Stephens Lake at 141.12 m	3,850 m^3/s
Best Gate Discharge with Stephens Lake at 139.6 m	3,900 m^3/s
Rated Total Output Power with Stephens Lake at 141.12 m	630 MW
Rated Total Output Power with Stephens Lake at 139.6 m	695 MW
Generated Rated Output	99.3 MW/117 MVA
Average Annual Energy	4,400 GWh
Annual Dependable Energy	2,900 GWh

* Plant discharge is influenced by the level of Stephens Lake which controls the water level at the downstream end of the generating station. The FSL for Stephens Lake is 141.12 m. Historically, Stephens Lake levels have been at or below 139.6 m 10% of the time and this condition is used here to represent Keeyask plant conditions at low Stephens Lake levels. Full gate discharge is the wicket gate setting that allows for maximum flow through the turbine at a given head. The efficiency at this gate setting is typically less than the best gate setting. Best gate discharge is the wicket gate setting at which the maximum efficiency for a turbine unit is achieved at a given head. Generally, the preferred setting is for best gate discharge, in order to get the most energy from any given volume of water. If water levels in the reservoir require water to be discharged over the spillway, full gate settings will be used in order to pass the water through the turbines to generate electricity.

ATTACHMENT E

LIST OF PAST, CURRENT AND FUTURE PROJECTS AND ACTIVITIES FOR THE CUMULATIVE EFFECTS ASSESSMENT

Attachment E: List of Past, Current and Future Projects and Activities for the Cumulative Effects Assessment

The following are past and current (i.e., ongoing) projects and activities to be considered in the cumulative effects assessment:

- Manitoba Hydro generation-related developments in the North:
  - Churchill River Diversion
  - Lake Winnipeg Regulation
  - Jenpeg, Kelsey, Kettle, Long Spruce, Limestone and Wuskwatim Generating Stations
  - Kelsey re-runnering
  - Keeyask Infrastructure Project
- Linear development in the region (i.e., transmission lines and highways, including upgrades to PR 280)
- Mining (e.g., Vale)
- Commercial forestry
- Commercial fishing of sturgeon
- Other agents of change as may be identified in the assessment of specific VECs
- The following are future projects to be considered in the cumulative effects assessment:
- Gillam redevelopment
- Bipole III Transmission
- Keeyask Transmission Project
- Conawapa Generation Project

ATTACHMENT F

RELATION OF THE PROJECT TO MANITOBA HYDRO'S INTEGRATED SYSTEM

Attachment F: Relation of the Project to Manitoba Hydro's Integrated System

The Keeyask Partnership is the proponent only of the Keeyask Generation Project. The Project will be connected to Manitoba Hydro's integrated system; however, the system is not part of the Project for which regulatory approval is being sought.

The Keeyask Partnership plans to begin construction of the Keeyask Generation Project with power supplied from diesel generators. While the Project could be completed with diesel power, the Partnership's preference for economic, reliability and environmental reasons is to use power from Manitoba Hydro's integrated system. In accordance with the business agreements that have been made, that power will be supplied via the Keeyask Transmission Project. For the purposes of construction power, the Keeyask Partnership is an independent customer of Manitoba Hydro. Manitoba Hydro is obligated to supply the Partnership as it would any other customer.

The Keeyask Transmission Project also will include new facilities intended to transmit the power produced at the Keeyask Generating Station to Manitoba Hydro's integrated power system. The Keeyask Partnership will sell to Manitoba Hydro the entirety of the power produced at Keeyask. Manitoba Hydro will take delivery and ownership of Keeyask energy at the Keeyask Generating Station tailrace deck.