WUSKWATIM

Power Limited Partnership

Monitoring Overview

2008–09

Monitoring Overview for the period ending March 31, 2009

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Message from the Chair of the general partner of WPLP

Wuskwatim Power Limited Partnership (WPLP) is pleased to present this third annual Monitoring Overview, for the period ending March 31, 2009. The Wuskwatim Generation Project's monitoring activities were performed in accordance with prescribed government legislation, permits and authorizations, as well as the Wuskwatim Project Development Agreement signed between Manitoba Hydro and the Nisichawayasihk Cree Nation (NCN), partners in WPLP. This document summarizes the results of ongoing monitoring programs being undertaken as part of the Wuskwatim development, and is not a required technical report for regulatory purposes.

Considerable construction progress took place this year on the Wuskwatim project. A major milestone was reached with the mobilization of the general civil contractor, and an agreement by all contractors to advance the project in-service date to late 2011. Primary construction activities centered on the excavation of the powerhouse and spillway areas and completion of infrastructure contracts. The main construction camp and support facilities, including recreational facilities and a cross cultural education area, were completed and are now fully operational. Comprehensive monitoring programs, as outlined in this document, were used to monitor the effects of these construction activities. Effects continue to reflect what was predicted in the project's environmental assessment. Construction monitoring will continue until Wuskwatim is complete and operational.

Manitoba Hydro is acting as Wuskwatim project manager on behalf of the WPLP, and will build and operate the plant consistent with the objectives set out in its Corporate Environmental Management Policy and Sustainable Development Guiding Principles. Manitoba Hydro worked with NCN to prepare the following overview on behalf of WPLP.

Ethinesewin, the traditional knowledge and wisdom of the Nisichawayasihk people, and conventional scientific analysis continue to be used equally as part of our overall monitoring activities. Traditional Aboriginal knowledge has been integral to the planning and development of the project. The knowledge and information shared by NCN elders is helping to ensure that project activities respect NCN's traditional values, way of life and land. Over the past year, NCN elders have included youth in their inspections of the Wuskwatim construction area so that this traditional way of understanding our world is passed on to future generations.

Sincerely,

Ken R.F. Adams, P. Eng

Chair of the general partner of Wuskwatim Power Limited Partnership
(5022649 Manitoba Ltd.)

Introduction

The 200-megawatt Wuskwatim Generation Project is the first hydroelectric generating station to be built in Manitoba since the Limestone Generating Station in 1992. Once completed, Wuskwatim will provide clean and renewable hydroelectric power to help meet the growing demand for electrical energy in Manitoba and in export markets across Canada and the United States.

WPLP, an entity consisting of Manitoba Hydro and the Nisichawayasihk Cree Nation (NCN), is developing the project. This is the first time in Canada that an electric utility has partnered with a First Nation to develop a generating station.

Wuskwatim is located in NCN's traditional territory at Taskinigup Falls, at the outlet of Wuskwatim Lake on the Burntwood River in northern Manitoba. The station is designed as a low head "run-of-river" plant. It will create less than one-half of one square kilometre of flooding, the least amount for any hydro project ever developed in northern Manitoba.

The Wuskwatim Project Development Agreement (PDA), approved by the NCN community in June 2006, gives NCN the opportunity to own up to 33 per cent of the Wuskwatim Generating Station. NCN currently owns the full 33 per cent and has until the completion of construction, anticipated to be late 2011, to decide whether or not it wants to retain this level of ownership. Manitoba Hydro continues to provide construction and management services to WPLP.

Use of NCN's traditional knowledge was an essential part of the Wuskwatim planning process, helping to reduce adverse effects of the dam and establish the location of the construction camp and routes for the access road and transmission lines. To help ensure there is minimum disruption to the local environment as the project moves through the various phases of construction and operation, traditional knowledge and conventional environmental monitoring procedures will continue to be used as key sources of information. NCN-led ceremonies have also been undertaken at key construction milestones to help mitigate the effect of the project on culture and heritage, and to demonstrate respect for the land and resources.

Project Status

Over the past year, considerable progress was made on the Wuskwatim Generation Project, located 45 km southwest of Thompson on the Burntwood River. A major project milestone was reached with the November 2008 signing of the General Civil Works (GCW) contract with O'Connell-Neilson-EBC G.P. (ONE). A feature of this contract is the advancement of the project in-service date from 2012 to 2011.

Primary construction activities in the last 12 months centred on the excavation of the powerhouse and spillway areas, and completion of infrastructure contracts. The civil work conducted during this period included the excavation of approximately 1.2 million cubic metres of overlying soil and bedrock for the principal structures and channels. Coarse and fine aggregate for concrete production was also manufactured and stockpiled for use in the upcoming year. At year-end, the main construction camp and support facilities were fully operational. The camp provides accommodation for over 700 workers, and includes water and sewage treatment plants, ambulance and fire buildings, recreational facilities, cross cultural education area, and a kitchen and dining complex.

Environmental, social and economic monitoring continued and is being conducted in accordance with the terms and conditions of regulatory approvals issued by provincial and federal regulatory agencies. A wide range of monitoring was conducted on the Burntwood River in the open water season of 2008 and the winter of 2009 to determine the impact of cofferdam construction, which occurred in both the winter and summer of 2008. Sediment levels were monitored and measures taken to ensure that water quality was not affected during in-stream cofferdam construction.

Since the start of construction, just under 60 per cent of project hires have been Aboriginal, and WPLP spent $100.6 million on goods and services purchased from northern Manitoba Aboriginal businesses. Over the past year, project employment peaked at over 400 workers. Cross cultural workshops and traditional ceremonies took place throughout the year to demonstrate respect for, and mitigate, the effects of the project on local Aboriginal culture.

Wuskwatim Monitoring

This report presents an overview of monitoring activities undertaken for the Wuskwatim Generation Project between April 1, 2008 and March 31, 2009.

Monitoring for the construction and operational phases of the Wuskwatim Generation Project is conducted in accordance with the limits, terms and conditions of regulatory approvals issued by the Province of Manitoba and Government of Canada. These licences include an Environment Act Licence, Fisheries Act Authorizations and an Interim Water Power Act Licence.

The Environment Act Licence for the Wuskwatim Generation Project, issued by Manitoba Conservation on June 21, 2006, prescribed monitoring for specific elements of the project and required the development and approval of the following documents:

- Environmental Protection Plan for construction and operation of the access road
- Environmental Protection Plan for construction and operation of the construction camp
- Environmental Protection Plan for construction and operation of the generating station
- Aquatic Effects Monitoring Program
- Terrestrial Effects Monitoring Program
- Physical Environment Monitoring Program
- Resource Use Monitoring Plan
- Heritage Resources Protection Plan
- Road Access Management Plan
- Socio-economic Monitoring Plan
- Sediment Management Plan
- No Net Loss Plan (compensation plan for fish habitat loss)

Since the beginning of construction in August 2006, these plans and programs have been implemented and the results of monitoring activities have been summarized through this annual monitoring overview. Technical reports on the monitoring are submitted annually to Manitoba Conservation.

Previous monitoring overviews have discussed the effect of access road construction on the biophysical environment and provided baseline information on the biophysical and physical environment in the Burntwood River. In 2008, construction activities occurred in the Burntwood River with the installation of cofferdams that allowed for excavation of the spillway and powerhouse channels in an area that was dry and isolated from the flow of the river. As a result, this is the first report where effects on the aquatic ecosystem in the Burntwood River are covered as monitoring occurred during and after in-stream construction took place.

(Above and below) Workers preparing to perform water testing at Wuskwatim.

After three years of construction activities, socio-economic monitoring continues to provide information on economic and social impacts resulting from the project. The project continues to contribute significantly to the economy of Manitoba in terms of employment, labour income and tax revenues.

Environmental Protection Plans

The Environmental Inspectors, also known as *Aski Kihche O'nanakachechikeo* (AKOs), conduct compliance monitoring to ensure the mitigation measures outlined in the Environmental Protection Plans, and licenses, permits, approvals and authorizations are followed during construction. Daily field inspections ensure environmental issues and concerns are addressed quickly on-site. The AKOs attend contractor meetings to discuss specific environmental issues which require attention. Monthly meetings with all construction staff provide a good opportunity to address and mitigate issues that affect everyone. Corrective action reports are used to track and document non-compliance issues or concerns that require specific remediation or mitigation measures to be implemented by the contractor. Regular discussions and reports to regulatory authorities help resolve environmental issues quickly and effectively. The issues listed below were successfully resolved this year.

Wastewater issues

Water infiltration and increased water usage resulted in higher water levels in the primary cell of the wastewater lagoon in the spring of 2008. Organic/microbiological parameters exceeded the allowable discharge limits as specified in Environment Act License No. 2699. As the water could not be discharged, Manitoba Conservation issued a temporary suspension of the Environment Act License, at Manitoba Hydro's request, to allow Manitoba Hydro to increase the operating depth. Manitoba Conservation conducted an inspection of both the primary and secondary lagoons in October 2008 and no issues or concerns were identified at that time.

Excavation of the spillway channel.

Spill response and site remediation

A finalized Spill Response Plan (SRP) was completed by the Wuskwatim Construction Department in September 2008. Three spills within the powerhouse and spillway excavation area occurred. All spills were below reportable quantities and were effectively remediated. As road construction concluded, marshalling yards and borrow areas were assessed to ensure proper removal and disposal of hazardous material and waste. Progress was made in rehabilitation efforts, and no further remediation is required at this time.

Wildlife

In April 2008, Manitoba Conservation hosted the second annual "Bear Smart" workshop at Wuskwatim. Participation at the workshop was excellent and consequently there were no bear-related issues at camp this year. At stream crossings along the access road, an NCN-registered trapline holder removed beaver dams to maintain flows at stream crossings two, six, and nine. Nuisance wildlife near the main Wuskwatim construction camp included several foxes and a skunk, all of which were successfully live trapped and relocated away from camp.

Ethinesewin

Ethinesewin, the traditional knowledge and collective wisdom of Nisichawayasihk people, is an integral component of monitoring for the Wuskwatim Generation Project. *Ethinesewin* provided by local elders and community members is vital to ensuring the project achieves *Kistethichekewin*, which means that the conduct of those involved is always based on the sacred responsibility to treat all things with respect and honour, as outlined in *Kihche'othasowewin* (the Great Law of the Creator).

Respect for *Ethinesewin* is shown by documenting and incorporating elder expertise and knowledge of the natural environment into project monitoring and assessment.

The 2008 *Ethinesewin*-based Monitoring Program focused on changes in and around the Wuskwatim Lake area. The program was designed to get the perspective of elders on an ever-changing Wuskwatim Lake. As a result of their observations, the elders provided a number of recommendations about possible mitigation options for traditional medicines that have the potential to be affected by Wuskwatim.

The elders also used this year's program to teach youth how traditional knowledge can be used to observe the land and water in and around the Wuskwatim project. Over 10 days in August 2008, a group of youth and elders from NCN participated in a traditional and medicinal ceremonial gathering at Wuskwatim Lake. NCN elders taught youth from the community about traditional medicines, educated youth to ensure traditional knowledge is maintained and performed ceremonies for sites sacred to NCN, including ancient and recent burial sites.

The group travelled up the Muskosi River to gather traditional medicines, like *wekis* (muskrat root) and *mwa-ko-pa-kwa-te-kwa* (Labrador Tea), along the shoreline.

Elders taught the youth when and how to harvest medicines so they are the most potent, and how to use different medicines for various ailments. They also explained the importance of offering tobacco when plants are taken from the ground.

At Wuskwatim Falls, elders informed youth about the different trees in the area, like balsam fir, tamarack and birch, and how different parts of these trees can be used to remedy various health conditions. They also noted that spruce gum can be boiled into an ointment and used for cuts, scrapes and other types of rashes.

As part of the trip, elders and youth participated in a beautification ceremony. Sage was used to purify the body, cedar for protection, sweet grass for kindness to self and tobacco for an offering to Mother Earth. Together, the four were used as a smudge to purify the body.

At the end of the trip, the youth commented that they learned to appreciate the wisdom and knowledge the elders have gained with age and the guidance of the Great Spirit. The teachings of elders are not forced, but are learned by those who are willing to learn, open-minded, alert and most of all respectful of the knowledge being shared by elders. Best of all, these teachings are often shared with humour and lots of laughter!

The opportunity for elders and youth to come together at Wuskwatim creates an important link between these two generations. It ensures that the traditional knowledge of elders is passed on to the younger generation, and that younger generations appreciate how the land and water in this area changed over time, as well as before, during and after the Wuskwatim project.

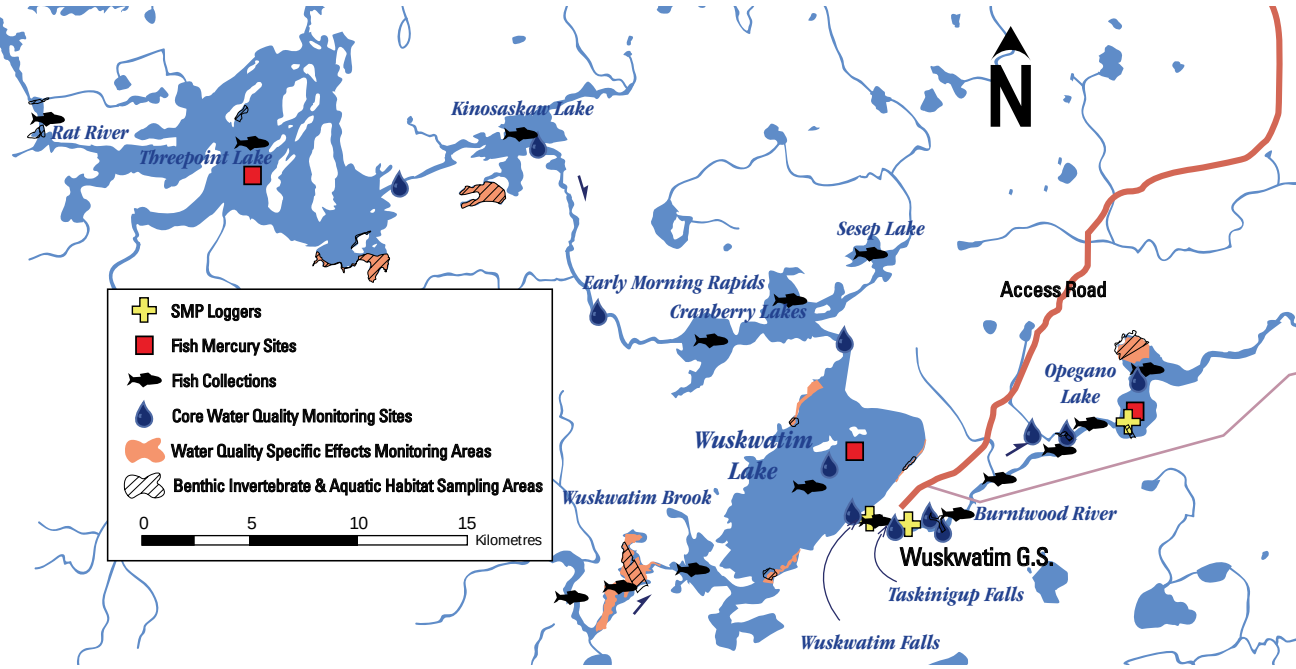
Aquatic Effects Monitoring Program

In-stream construction monitoring commenced in January 2008 with construction of the Stage 1 cofferdams, which allowed the excavation of the spillway channel, powerhouse and main dam to take place in dry conditions. The upstream cofferdam was constructed in stages: cofferdam 1A, 1B and the rock groin. The Stage 1 upstream cofferdam was completed on March 3, 2008. No in-stream construction occurred during spring and early summer. The placement of granular material in-stream along the upstream cofferdam started July 29, 2008 and continued until August 9, 2008. Clay fill was added to the upstream cofferdam from August 11 to 16, 2008. Construction of the Stage 1 downstream cofferdam began on August 17 with the placement of rock fill. Clay (impervious fill) was added to the downstream cofferdam from August 19 to 22, 2008. A fish salvage was conducted prior to dewatering of cofferdams.

The Aquatic Effects Monitoring Program in 2008–09 focused on areas potentially affected by in-stream cofferdam construction in the Burntwood River. Construction monitoring focused on short-term effects related to specific construction activities. The results of this monitoring provide an indication of the types of environmental changes that may take place.

In addition to direct in-stream construction monitoring, aquatic effects monitoring for 2008–09 also included assessment of Wuskwatim access road stream crossings and streams along the Churchill River Diversion (CRD) route. Stream crossings along the access road were examined to determine whether there were any ongoing erosion

Map of Aquatic Monitoring Sites



effects from road construction. As part of the Wuskwatim project No Net Loss Plan, three streams along the CRD route were assessed to determine the quality of fish habitat present, based on the number and type of fish currently using the sites. Habitat at these sites is to be enhanced as part of the project to provide compensation for loss of habitat due to in-stream infrastructure.

Construction monitoring

Fish salvage during dewatering of the Stage 1 cofferdam

The authorization issued by the Department of Fisheries and Oceans Canada for the construction of the generating station requires fish to be salvaged from areas dewatered by the construction of cofferdams. In August 2008, the construction of the Stage 1 cofferdam was completed and 0.9 hectares of riverbed was dewatered along the north shore of the Burntwood River upstream from Taskinigup Falls. Almost 1,200 fish, representing 14 species, were live captured in this area using gill nets, dip nets and a backpack electrofisher. Sixty per cent were young-of-the-year of species such as sculpin, emerald and spottail shiner, and trout-perch. A few young-of-the-year tullibee and whitefish were also captured. Very few large fish (walleye, lake whitefish, tullibee, and jackfish) were collected. Captured fish were released back into the Burntwood River.

Water quality monitoring in the Burntwood River

As described in the Sediment Management section, changes to turbidity were monitored continuously using in-stream loggers immediately upstream and downstream of the construction site to determine the need for adaptive management of construction practices if sediment concentrations exceeded prescribed levels. Additional turbidity loggers further downstream in the Burntwood River were installed to monitor the spatial extent of any increases in turbidity resulting from construction. There was no increase in turbidity measured at the Opegano Lake monitoring site compared to the site upstream of construction, indicating that there was no detectable increase in sediments due to construction at sites further downstream.

In addition to turbidity loggers, water quality samples were collected at 13 sites: 10 sites were located on the Burntwood River between Wuskwatim Lake and the inlet of Split Lake, one site on the Odei River, and two sites which were on two tributary streams between Taskinigup Falls and Opegano Lake (see map on page 13). Sampling was conducted in mid-July, mid-August, and in late September to correspond with cofferdam construction. A complete suite of water quality parameters was examined, including suspended sediments, turbidity, pH, dissolved oxygen, dissolved solids and related parameters, including hardness, nutrients, metals and hydrocarbons.

Potential effects due to construction were assessed based on location and comparison to baseline conditions. The second comparison is important because some parameters, such as suspended sediments and turbidity, increased in the Burntwood River downstream of Wuskwatim Lake even prior to any construction activity.

During the three sampling periods, water quality parameters were within Manitoba water quality guidelines, indicating construction had no adverse effect on water quality in the Burntwood River. This is consistent with the results of the in-stream turbidity loggers which showed small increases in turbidity adjacent to construction, undetectable changes once the river mixed downstream of construction and no detectable changes in water quality at Opegano Lake.

Collection of fish and benthic invertebrate samples

The Aquatic Effects Monitoring Program included two studies to monitor the effects of sediment inputs from construction on plants and animals in the Burntwood River:

- Collection of fish (walleye, lake whitefish and cisco) for evaluation of acute effects as indicated by changes in their gills and other indicators of health
- Collection of benthic invertebrate samples in areas immediately downstream of the construction site to determine whether changes to the abundance and types of invertebrate present were occurring

Some types of invertebrate are very sensitive to environmental disruptions, including sediment inputs; community composition can thus change quickly if sediment additions are having an adverse effect. Both fish and benthic invertebrate studies compared sites immediately downstream of the construction site to upstream conditions.

Twenty fish (walleye, cisco, and lake whitefish) were captured in the Burntwood River downstream of Taskinigup Falls, and an additional 20 were collected from Wuskwatim Lake for comparison. The fish were examined externally and internally for any sign of physical stress, and the gills were removed and preserved for analysis. However, it was determined that increases in suspended sediments during construction were too short-term and localized to have any detectable effects on the health of the sampled fish, which can easily swim out of local sediment plumes. Therefore, samples were not analyzed further.

Benthic invertebrates were sampled to describe their community characteristics, such as the number, distribution and species present. Samples were collected at the inlets and mainstem of the Burntwood River and reference sites, including Opegano Lake, Rat River and Threepoint Lake. Benthic invertebrate samples were analyzed and it was determined that total suspended solids had no effect on benthic communities.

Weighing fish caught during a salvage fishery.

Aquatic monitoring at stream crossings

Nine stream crossings, eight along the Wuskwatim access road and one through the camp, were built in 2006–07. Two water quality parameters, turbidity and total suspended solids (TSS), were used to monitor aquatic ecosystem impacts in spring and summer 2008 to identify any ongoing effects to water quality after construction was complete.

In spring, there was no evidence of construction related sediment inputs at six of the nine stream crossings. At two of the crossings, suspended sediments were higher downstream than upstream, suggesting inputs from the crossing sites. Increases were within the short-term Manitoba water quality objective of an allowable increase of 25 mg/L (24-hour averaging duration). There was no evidence of erosion at the crossings, so increases may have been due to drainage from roadside ditches. By mid-summer, there were no substantive upstream/downstream differences in suspended sediments at the crossings. In addition, suspended sediment concentrations were lower in summer than in spring. Spring sediment loads are expected to further decrease once vegetation has established in roadside ditches and at stream crossings.

Additional monitoring in spring 2008 assessed whether fish could pass upstream through the culverts. Large-bodied fish were not observed in all the streams, but where present, they were observed both upstream and downstream of the culverts, indicating that they were able to successfully move upstream.

No Net Loss Plan pre-enhancement monitoring

One component of the No Net Loss Plan is habitat enhancement at a few small stream mouths adversely affected by the Churchill River Diversion (CRD) Project in the mid-1970s. Potential locations were identified through consultation with NCN elders and three candidate sites were selected on Wapisu and Threepoint lakes. Young-of-the-year white sucker and small forage species, such as brook stickleback, have been captured at these sites. However, impediments to fish passage presently restrict use of the tributaries by large-bodied fish species. Proposed habitat improvements include the removal of debris dams, modification of existing channels to remove sediment and improve flow, and increasing habitat diversity through the use of rocks or logs to establish in-stream and shoreline vegetation.

Terrestrial Effects Monitoring Program

Terrestrial habitat and vegetation monitoring

A sensitive site disturbance survey was conducted at Wuskwatim to review whether any unexpected project-related clearing had occurred. The Wuskwatim Environmental Impact Statement (EIS) outlined the amount of forested area which would be cleared for each project component. Cleared areas are being minimized in order to limit the impact of the project on the surrounding environment. In order to assess the amount of land cleared for the project to date, aerial photographs were taken from a helicopter which flew along the edges of all project features including, among others, the access road, construction camp, and borrow areas. The photographs confirmed that land cleared for various project features is consistent with that outlined in the EIS.

Mammal monitoring

Annual mammal surveys have been used to monitor the potential impacts of the access road and generating station on the local mammal populations. Data collected during ground surveys in 2007 and 2008 were used to compare pre-construction caribou activity to activity levels near the access road and generating station during construction. Summer and fall ground surveys were also used to assess the occurrence of gray wolf, moose and black bear living in the vicinity of the Wuskwatim access road and generating station site.

NCN elders and project scientists did expect caribou movement and habitat selection to be affected by noise-related disturbances associated with project construction. Construction monitoring indicated a decline in caribou habitat near the road and generating station, as predicted in the Project EIS. Between 2005 and 2008, caribou track counts declined by approximately 20 per cent around the project site. This decline in activity may be a result of sensory disturbance resulting from traffic, machinery or blasting, loss of habitat effectiveness or habitat fragmentation. These impacts are expected to have an insignificant effect overall when the larger caribou range is considered. Although woodland caribou may have experienced a small loss and alteration of habitat around the access road, caribou are still calving in habitats greater than 2,000 metres away from the access road, which is consistent with activity prior to development.

Mink

Fox

Lynx observed on access road

Wolf track

Consistent with caribou activity, moose activity levels also declined between 2005 and 2008. Although moose track counts declined, the moose tracks which were identified tended to be closer to the access road during construction in 2007 and 2008. Increased moose activity close to the access road was unexpected and is being studied further.

Conversely, bear activity levels increased significantly — by at least three-fold in 2007 — particularly in areas near the generating station and access road. By 2008, bear activity levels returned to those observed pre-construction. It is possible that the anomalous increase in the amount of bears coincided with an increase in the berry production of local plants. This has yet to be determined.

Mammal sightings

There have been a number of mammal sightings in the Wuskwatim project area over the last year. The Environmental Supervisor recorded 21 moose, 15 black bear, two wolf, six fox, five lynx, three caribou and two wolverine sightings. Most of these mammals were observed along the access road. It is likely that many of the observations were of the same animal. Moose were typically observed at the stream crossings along the access road, with the sole exception being a moose that was observed in the Burntwood River. The rarest observations this year were the wolverine sightings. This is an elusive mammal which had not been observed in the project area previously and has only been known to exist in the area based on its tracks and scat.

Wapisu Caribou Committee

The Wapisu Caribou Committee (WCC) is a multi-stakeholder group comprised of Manitoba Hydro, NCN, Manitoba Conservation and Wildlife Resources Consulting Services MB Inc. As well, federal government representatives are copied on meeting information. The WCC was established as a specific condition of Environment Act Licence No. 2699. The committee provides advice and recommendations regarding caribou monitoring and research undertaken as part of the Wuskwatim Generation Project. The WCC, together with local NCN members, contributed to the development of a brochure explaining the essential role NCN community members have in ensuring the survival of this threatened species. To promote the brochure, an NCN elder visited 150 households in the community to deliver it and discuss woodland caribou conservation.

Owls

Traditional knowledge collected during brochure distribution indicates that woodland caribou are threatened by natural disasters such as fire, which forces them out of their traditional habitat; thin ice, which may put them at risk of drowning; and deep snow in the winter that can inhibit their ability to escape predators such as wolves. With so many natural impacts affecting woodland caribou, human impacts such as harvesting and habitat disturbance must be minimized to protect this important species.

The WCC provides guidance on the criteria and processes used for determining the herd's sustainability. In 2008, the WCC recommended decommissioning a trail that was cleared as part of the Adverse Effects Agreement as this trail facilitated access to the herd. Without this access, harvest activities can be more easily prevented from occurring. The signatories to the WPLP approved the closure and decommissioning of the trail. Decommissioning began this winter with trail closure signs posted and trees felled to deter access.

Woodland caribou sightings have increased in the area over the last couple of years, yet it has been determined that the woodland caribou population has not increased.

The WCC is working to monitor the herd and resource harvesting activities while developing new education and awareness initiatives that will help protect this threatened species.

Bird monitoring

Bird monitoring studies are used to assess impacts to birds during Wuskwatim construction and to determine if any additional mitigation efforts are required. Based on the last survey conducted in 2007, no unexpected impacts to birds have been observed or reported that require additional mitigation measures. However, bird density in the project area, as well as diversity in the area adjacent to the road, has been affected by clearing and the associated "edge effect". It is thought that birds in the area may adopt the clearing edge as a territory boundary and consequently become more concentrated along the road and forest edge where they are more detectable to observers. A second survey will be conducted during the summer of 2009 to continue with the assessment of construction effects on local bird populations.

Sediment Management Plan

The monitoring of total suspended solids (TSS) during in-stream construction is a requirement of the Fisheries Act Authorization for construction of the project. Emphasis is placed on minimizing the amount of sediment entering the Burntwood River during construction. In-stream construction on the Stage 1 cofferdams occurred between July 29 and August 22, 2008.

Analyzing a water sample for TSS can take up to 12 hours, precluding real time data analysis. However, a correlation scale between turbidity and TSS was developed for the Wuskwatim environment, which allowed the use of real time turbidity measurements to calculate TSS. Turbidity loggers were placed directly upstream and downstream of the construction site and at the inlet to Opegano Lake. These loggers transmitted readings to the construction site every 15 minutes, enabling assessment of the data in real time. Real time analysis is essential during in-stream construction as it allows timely decisions to be made to help ensure regulatory limits with regard to TSS levels are met.

Between July 29 and August 22, 2008, allowable TSS limits were exceeded on August 17, 18 and 19. These overages were detected at the site II loggers (Taskinigup Falls), and were attributed to the in-stream work occurring at the downstream cofferdam. While the overages were moderate and sporadic, a decision was made to suspend in-stream work until TSS readings returned to acceptable levels. On each of the three days in question, work stopped in the early afternoon but was able to resume the following morning when levels were again acceptable. Increases in TSS levels at site III (Opegano Lake) were not observed.

Daily monitoring results from this process were sent to the Department of Fisheries and Oceans (DFO) for review.

Heritage Resource Protection Plan

Archaeological monitoring was conducted during cofferdam dewatering in August 2008. Methods used to examine the dewatered area included a pedestrian survey, metal detection survey, investigation of diagonal transects across the dewatered area and hand investigation of silt/soil deposits. The dewatered area measured approximately 180 metres by 80 metres.

It was determined that artifacts recovered from the dewatered area had been transported to the location by the river after being dislodged from their original location by erosion or other processes. Most of the artifacts found were from the Initial Woodland (2,000 to 1,000 years ago) and Middle Fur Trade (1821–1870) periods, although other periods were represented. Artifacts recovered included: Laurel pottery (dating from 1,000 to 2,500 years ago, pre-European contact); terminal woodland fabric impressed ceramic shards; a quartz biface tool; chert and quartz lithic flakes; two middle historic kaolin pipe stems; hand wrought iron nail (pre-1850); medicine bottle fragments; historic ceramic fragments; and a number of bone fragments. It was considered a complete and comprehensive survey of the area.

Physical Environment Monitoring

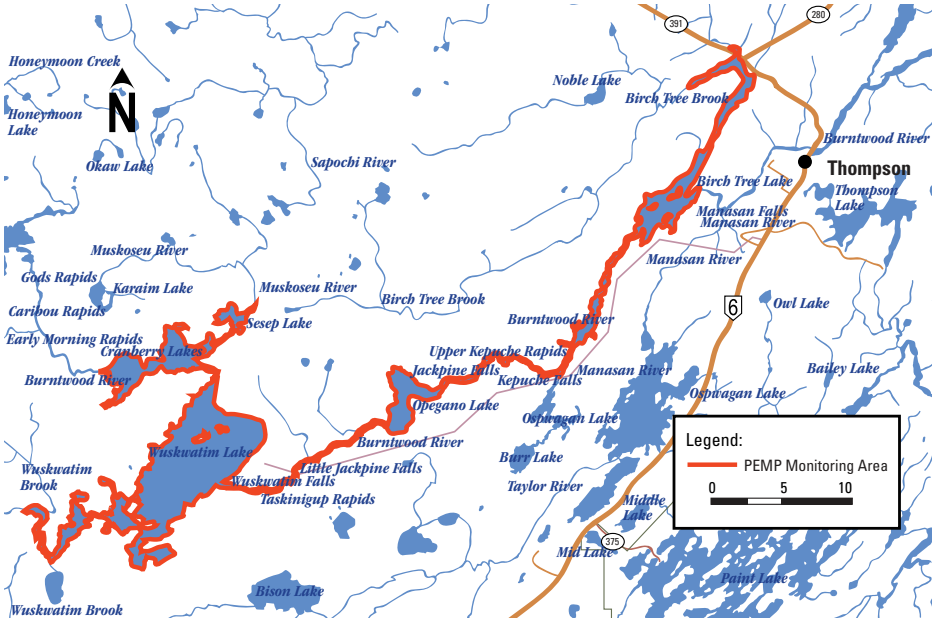
The Physical Environment Monitoring Program (PEMP) is an adaptive program designed to measure various components of the physical environment that may experience some form of change from the construction and operation of the Wuskwatim Generation Project.

Components of the physical environment addressed in the PEMP include:

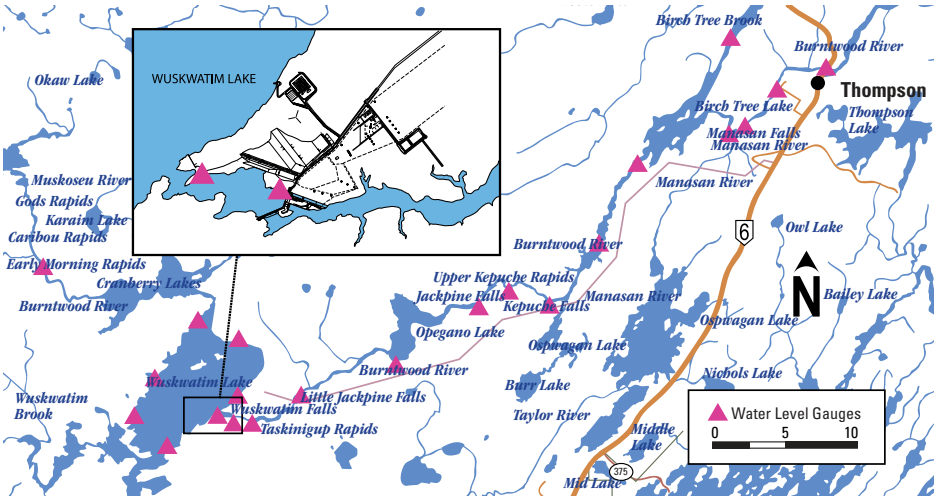
- climate
- water regime
- physiography
- erosion
- sediment transport
- woody debris

The PEMP monitoring area includes a section of the Burntwood River upstream of the project to the foot of Early Morning Rapids — including Wuskwatim Lake — and downstream of the project area to Birch Tree Lake, as shown below.

PEMP Monitoring Area



Location of water level gauges, including two in the forebay area to monitor water levels immediately upstream of the construction site



The summer of 2008 was the first year where in-stream construction data was collected during the open water period within the PEMP study area. In-stream construction on the upstream cofferdam occurred from July 29 to August 9 and August 11 to 16, 2008. Work on the downstream cofferdams occurred August 17 to 22. There was no in-stream construction for the remainder of the 2008–09 period. Results from baseline monitoring were compared to construction monitoring results and will be compared to operation monitoring results in order to determine if environmental change has occurred.

Climate, water regime, and reservoir greenhouse gas monitoring

In order to better characterize the climate of the Wuskwatim monitoring area, weather was monitored at five weather stations within the region. The operation of Environment Canada's weather station at Wuskwatim Lake was transferred to Manitoba Hydro in November 2008 to improve the reliability of the weather monitoring in the Wuskwatim project area. During the transfer process, the weather station experienced further malfunctions resulting in periods where some weather information was not collected. Plans are underway to improve the reliability of this weather station for the 2009–10 period.

To address above-average flow conditions on the Lower Nelson, outflows at the Notigi control structure were decreased, meaning river flows and water levels on the Burntwood River were decreased in mid-June until mid-September. During this period of reduced flows, the water level on Wuskwatim Lake decreased approximately one metre. As predicted, there was no change in the water level on Wuskwatim Lake or downstream of the construction area as result of in-stream construction activities.

In 2008 a reservoir greenhouse gas (GHG) monitoring program at Wuskwatim Lake was initiated. These studies are designed to characterize the spatial and temporal pre-impoundment conditions in the vicinity of the Wuskwatim project. This is the first time that Manitoba Hydro has conducted reservoir GHG baseline studies prior to reservoir creation.

An automated monitoring system was installed upstream of the Wuskwatim Generation Project, midway between Wuskwatim Falls and Taskinigup Falls. Continuous monitoring of carbon dioxide, methane and oxygen was conducted from mid-August to the end of October. In addition to the continuous monitoring, discrete measurements of carbon dioxide, methane and nitrous oxide were recorded on Wuskwatim Lake, between Wuskwatim Falls and Taskinigup Falls and downstream of Taskinigup Falls.

Physiography

Excavation for the powerhouse and spillway resulted in the removal of approximately 500,000 cubic metres of rock and 650,000 cubic metres of overburden material. A total of 605,000 cubic metres of rock and 1,178,000 cubic metres of overburden have been excavated since the project started. Some of this material was used to construct supporting infrastructure and to complete the construction of the Stage 1 cofferdams. The remaining material was placed on the north side of the immediate forebay.

This period, a total of 1,502,000 cubic metres of granular material was extracted from local borrow areas. The material was used to construct supporting infrastructure, as well as to complete and maintain the access road. Additional clearing and grubbing was carried out to expand the contractor work areas.

Shoreline erosion

Erosion is the movement of the top-of-bluff of a shoreline, either lakeshore or riverbank, and includes erosion of the lake or riverbed in the nearshore zone and the movement (failure) of the bank downwards towards the shore. Monitoring activities consist of surveying the shape of the bank and comparing the position of the bank and nearshore underwater slope from year to year.

The Wuskwatim Generation Project has 35 erosion monitoring sites and over 80 sediment monitoring sites. Twenty of the erosion monitoring sites have been monitored for several years, while the remaining 15 are relatively new, with data from those being limited to the last couple of years. Eleven of the relatively new sites were re-surveyed in the summer of 2008

During the past year, six erosion monitoring sites on Wuskwatim Lake that were surveyed in 2006, 2007 and 2008 generally showed less erosion compared to the 2006–07 period. The most recent data indicates that there has been insignificant (less than 0.25 metres) top-of-bluff recession at three of six monitoring sites surveyed in Wuskwatim Lake, with two of six sites experiencing a moderate amount of recession (between 0.25 and 0.99 metres) and one site experiencing greater than one metre of recession.

The most recent data indicates that there has been negligible (less than 0.25 meters) movement at three river monitoring sites located downstream of the Wuskwatim project, while one site experienced a moderate amount of movement (between 0.25 and 0.99 meters) and one site experienced greater than one metre of bank recession. This is consistent with the past monitoring of erosion at these sites.

Sediment transport

Sediment transport data was collected during the summer of 2008 at 27 sites and during the winter of 2008–09 at four sites within the Wuskwatim monitoring area, both upstream and downstream of the construction site. Total suspended solids (TSS), turbidity and sediment grain size data were collected at each site. Sedimentation data was collected during the in-stream Stage 1 cofferdam construction that occurred between July 29 and August 22, 2008. Sedimentation values were in the range of those collected during previous years of monitoring with no in-stream construction.

In the winter of 2008–09, measured TSS and turbidity levels were higher at locations downstream of the construction area (Opegano Lake to Birch Tree Lake). Since there were no construction activities this winter, this information establishes baseline winter TSS and turbidity in the project area. Results from the first winter monitoring program in 2007–08, which coincided with in-stream construction activities (January to March 2008), show that measured TSS and turbidity are in the same range as the baseline data collected during the winter of 2008–09.

Woody debris

The Manitoba Hydro waterways management group undertook debris management activities along the Burntwood River between Opegano Lake and Thompson. The debris management team travelled nearly 4,000 kilometres, patrolling some shorelines more than once, and removed small and large debris with the majority being old debris not related to the Wuskwatim project.

Socio-economic Monitoring

Economic monitoring

The Wuskwatim Generation Project influences the economy of Manitoba in many ways. This includes providing employment and thereby creating labour income, and purchasing goods and services required to construct the project. In turn, these expenditures result in incremental provincial tax revenues and contributions to provincial gross domestic product (GDP).

Job and labour income creation continue as long as some portion of spending on the project occurs in Manitoba. Influences are categorized as direct, indirect or induced impacts. Direct impacts result from project expenditures and refer to employment, purchases and income generated by the project itself. Indirect impacts refer to the employment, purchases and income created in other industries as the effects of project expenditures work their way through the economy. For example, there will be indirect impacts on businesses supplying materials and equipment to companies in the direct impact segment. Induced impacts result from the spending and respending of direct and indirect income generated by the project, increasing sales for consumer goods businesses and the businesses that supply them. These are the impacts that are created by the additional income and profits earned by workers and businesses that are associated with the project either directly or indirectly. The sum of the direct, indirect and induced impacts is the total economic impact of the project.

Data is available to provide estimates of direct employment, labour income, tax revenue impacts and purchases associated with the Wuskwatim Generation Project from the start of construction to March 2009. Information on some indirect and induced impacts of the project on the local economy, specifically the contributions of the Wuskwatim Generation Project to local employment and business opportunities in Thompson and Nelson House, was summarized in the 2007–08 Annual Monitoring Overview based on a survey conducted in early 2008. A second survey is anticipated to be conducted in 2010 and will be summarized in future Annual Monitoring Overview reports. Data is not available to calculate the impacts of the project on the provincial GDP.

Direct economic impacts

These are impacts of the initial project expenditures made to suppliers of labour, equipment and services required for the construction of the project.

Major direct economic impacts of the project from start of construction to March 2009 include:

	Total
Person-years of direct employment	677
$Millions of direct project purchases	$289.5
$Millions of direct labour income	$37.2
$Millions in direct federal & provincial taxes	$28.7

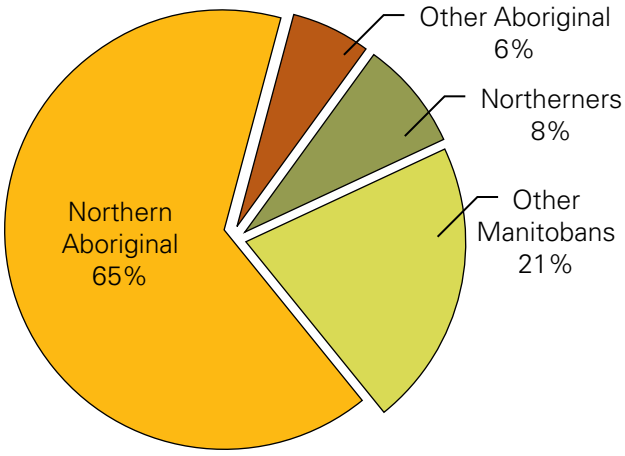
Employment

Traditionally, employment is measured by the number of jobs or "hires", referring to the number of people hired for any duration at the project site. However, when part-time and/or seasonal workers are used, this can be a misleading measure resulting in an overstatement of the economic impact of a project. An accepted method to standardize the concept of hires is to define a person-year of employment which is defined as one full-time job for one year. This typically represents about 2,000 hours of work.

Person-years of employment

From the start of construction to March 31, 2009, direct employment created on the project amounted to 677 person-years. Of this, 92 per cent or 623 person-years represent Manitoba employment. Total northern Manitoba and northern Manitoba Aboriginal employment impacts represent approximately 73 per cent (457 person-years) and 65 per cent (407 person-years), respectively, of Manitoba employment. The chart below provides a breakdown of the Manitoba person-years of employment.

Person-years of employment breakdown of Manitobans



Hires on the project

As of March 31, 2009, there were 1,794 hires, including Aboriginal hires. Of the total hires, 1,473 or 82 per cent were Manitobans. Total northern Manitoba and northern Manitoba Aboriginal hires represent approximately 70 per cent (1,024 hires) and 61 per cent (899 hires), respectively, of Manitoba hires. There were a total of 1,062 Aboriginal hires including 856 Status, 185 Métis, and 21 other (Inuit and non-Status). To date, there have been a total of 396 NCN hires on the project.

Breakdown of total project hires by job classification from the start of construction to March 31, 2009

Job Classification	Total Hires	Aboriginal	Non-Aboriginal
Labourer	291	229	62
Security Guard	51	42	9
Operating Engineers (Crane & Equipment)	341	202	139
Teamster	208	165	43
Carpenter & Millwright	110	45	65
Painter	1	1	0
Glass Worker	5	0	5
Floor Coverer	8	0	8
Insulator	1	0	1
Lather	1	0	1
Plasterer & Cement Mason	6	1	5
Sheet Metal Worker	4	1	3
Roofer	5	2	3
Sheeter, Decker & Cladder	8	5	3
Ironworker & Rodmen	28	14	14
Electrician	55	22	33
Pipefitter & Plumber	24	9	15
Office & Professional	72	40	32
Caterer	220	214	6
Other*	355	70	285
Total	**1,794**	**1,062**	**732**

* *The "Other" category refers to hires in job classifications not covered by the Burntwood Nelson Agreement. This would include managerial and supervisory staff (both contractor and Manitoba Hydro), other Manitoba Hydro site staff and certain technical staff (engineers and technicians).*

Employee turnover

Employee retention on the Wuskwatim job site has been very positive. Since project inception to March 31, 2009, there have been 448 occurrences where employees were discharged or resigned. This represents a rate of turnover of 25 per cent of total hires. Of the 448 occurrences where employees were discharged or resigned, 373 reported being of Aboriginal descent. This represents a 35 per cent rate of turnover among Aboriginal hires.[1] The majority of turnover (70 per cent) on the job site is comprised of resignations as opposed to discharges.

To date there have been a number of instances where individuals have resigned or been discharged from the job site, but have later returned to work on the project. Since project inception to March 31, 2009 this has occurred 76 times — approximately 17 per cent of total resignations and discharges. Of these returns to the work site, approximately 71 reported to be of Aboriginal descent, representing about 19 per cent of all Aboriginal resignations and discharges.

Analysis of turnover at the Wuskwatim job site indicates that employee turnover has been relatively low on the majority of project contracts (in almost all cases 25 per cent or less and in the majority of cases 10 per cent or less). Only the security and catering contracts experienced relatively high rates of turnover. Based on the experience of these contractors at site to date, factors influencing turnover include:

- The majority of contract positions are entry-level general labourer positions requiring very little in the way of pre-employment training.
- There was a "screening out" effect of the contract workforce over the first two years of construction, whereby time was required to identify those individuals interested in making a longer term commitment to working in the catering and/or security fields.
- During the early period of construction on the project the proximity of the construction camp to the highway resulted in a higher rate of turnover. This proximity resulted in more frequent trips off the job site, and generally into Thompson, which in turn resulted in more workers failing to report back to the job site for their shifts.

1 Turnover calculated as total incidences of discharged and resignations divided by total hires. The total number of resignations has been corrected to exclude circumstances where an individual left a position but was rehired to improve their job level on site.

Employee Training

A key component of the Wuskwatim Project Development Agreement is the provision for both pre-project and on-the-job training for northern Aboriginal people seeking employment on the project.

Pre-project training, designed to train and prepare northern Aboriginal people for employment in a wide range of occupations during the construction of both Wuskwatim and the proposed Keeyask projects, is being offered through the Wuskwatim and Keeyask Training Consortium (WKTC). Funded by Manitoba Hydro, and the provincial and federal governments, WKTC facilitates the Hydro Northern Training and Employment Initiative (HNTEI) and provides project-based funding to five Cree Nations and two Aboriginal organizations, who in turn offer training to their members. At Nelson House, training is provided through the Atoskiwin Training and Employment Centre (ATEC). To date, ATEC graduates have found employment at Wuskwatim in a wide variety of fields, including carpentry, catering, security, brush clearing and heavy equipment operation.

In addition to pre-project training through WKTC, approximately $1 million has been spent on on-the-job training provided by NCN joint venture contractors at the Wuskwatim site itself.

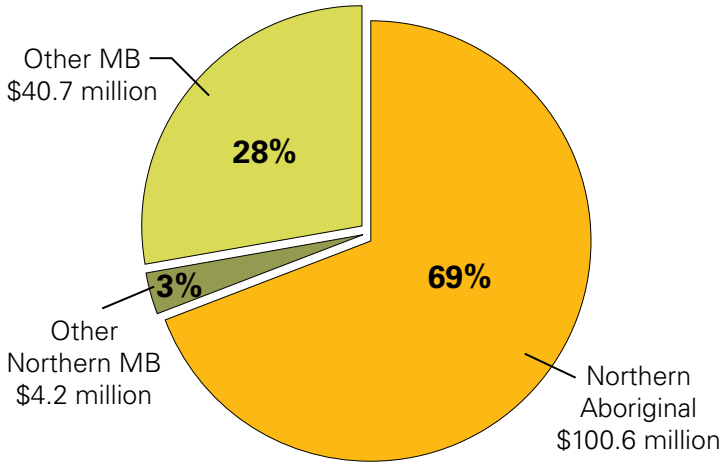
Purchasing

To the end of March 31, 2009, a total of $289.5 million was spent on goods and services for the project. Of this, $145.5 million were Manitoba purchases. Total northern Manitoba (Aboriginal and non-Aboriginal) purchases represent $104.8 million or 72 per cent of total Manitoba purchases. Total northern Manitoba Aboriginal purchases represent $100.6 million or 69 per cent of total Manitoba purchases. Another $2.5 million was spent on other purchases using credit cards and cheques. These purchases were not associated with a vendor number and therefore cannot be attributed to either a northern or Aboriginal business. The table below summarizes total purchases to date while the accompanying pie chart provides a further breakdown of the Manitoba purchases.

Purchases to end of March 2009

	$Millions	% of Total
Manitoba	**$145.5**	**50%**
Outside of Manitoba	$141.5	49%
Other	$2.5	1%
Total	**$289.5**	**100%**

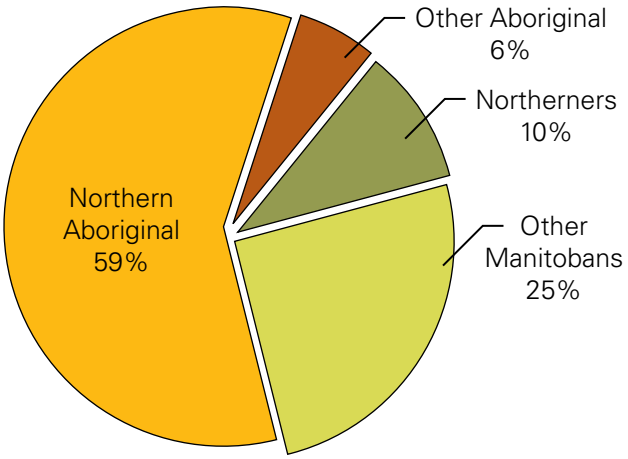
Breakdown of Manitoba purchases



Labour income

Labour income is an important indicator of the direct economic impact of a project. The estimate of labour income reflects the direct income earned by workers from employment on the project. It is the sum of wages and salaries associated with direct person-years of employment. The total direct labour income impact of the Wuskwatim Generation Project to the end of March 31, 2009 is approximately $37.2 million[2]. Nearly 89 per cent or $33.0 million represents labour income associated with direct Manitoba employment. Total northern Manitoba and northern Manitoba Aboriginal direct labour income impacts represent approximately 69 per cent ($22.7 million) and 59 per cent ($19.5 million), respectively, of the total Manitoba direct labour income. The chart below provides a breakdown of the estimated labour income.

Manitoba labour income breakdown



2 Labour income is calculated based on information provided by contractors and Manitoba Hydro.

Tax revenues

The Wuskwatim Generation Project also contributes to government revenues. This includes direct revenues received by federal and provincial governments such as payroll tax, personal income tax, fuel tax and provincial sales tax. Not all of these taxes are payable by the project; however, they are generated as a result of it. The estimate provided here does not include taxes received by the local or municipal government or taxes associated with indirect or induced employment.

The estimate of tax impacts to the end of March 2009 is $28.7 million and includes $0.8 million in payroll taxes[3], $9.6 million in personal income taxes[4] , $5.3 million in capital tax, $1.1 million in fuel tax[5] and $11.9 million in provincial retail sales tax[6].

Indirect and induced economic impacts

The Wuskwatim Socio-economic Effects Monitoring Plan required that a survey of indirect and induced impacts on businesses be conducted near the end of the infrastructure (road and camps) construction activity. This survey was conducted in early 2008 and the results of that survey were summarized in the 2007–08 Monitoring Overview. A second survey will be conducted in 2010 to reflect the peak of activity during the general civil work and will be summarized in future reports.

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3 Health and Post-secondary Education Tax is calculated as 2.15 per cent of the estimated labour income of $37.2 million

4 Personal income taxes are paid by individual employees to the federal and provincial governments. Each individual's personal tax situation (and therefore taxes payable) will vary. However, this estimate is based on a range of reasonable assumptions.

5 The fuel tax estimate is based on provincial taxes of 11.5 cents/litre for both diesel and gasoline and federal taxes of 4 cents/litre for diesel fuel and 10 cents/litre for gasoline; provincial and federal taxes of 3.2 cents/litre and 4.0 cents/litre, respectively, for aviation fuel.

6 PST is based on estimates of taxes paid directly by the project and PST on materials provided by suppliers under real property contracts

Wuskwatim cross cultural centre

Social monitoring

Cultural awareness activities and employee retention support programs

Numerous measures were in effect during the reporting period to support the retention of northern and Aboriginal employees at the job site, and to ensure that sensitivity and respect for local culture is demonstrated throughout construction of the project. These measures include on-site cultural awareness training for employees, voluntary counselling services, and cultural ceremonies prior to many key construction activities. Under contract to WPLP, NCN is responsible for providing cultural and retention support programming on-site.

Cultural awareness training

The purpose of cultural awareness training is to assess and address the challenges that arise from cultural differences experienced on the job site and as a result of interactions between employees and nearby communities. Training sessions consist of facilitated face-to-face awareness workshops delivered by qualified NCN members. Over the past fiscal year, 20 cultural awareness workshops were held and attended by 316 workers.

Commencing in April 2009, workshops will be held twice each week to accommodate the substantial increase in labour force associated with the general civil contract.

On-site counselling

On-site counselling is available on a voluntary basis to help all employees deal with any issues experienced while working on the project. This could include issues such as work adjustment problems, vocational/career issues, cultural adjustments, family stresses and money management, among other topics. Employees also have the option to involve other family members in counselling sessions and to meet with community elders. On-site counselling services are available all year and informational brochures are made available to publicize the service.

Cultural site ceremonies

Site ceremonies are held at key construction milestones to help mitigate the effect of the project on culture and heritage, and to demonstrate respect for the land. Ceremonies are organized by NCN spiritual leaders, and attended by Wuskwatim workers and other NCN members. To the end of March 2009, several ceremonies and sweats had been held, including most recently a pipe ceremony and sweat lodge ceremony.

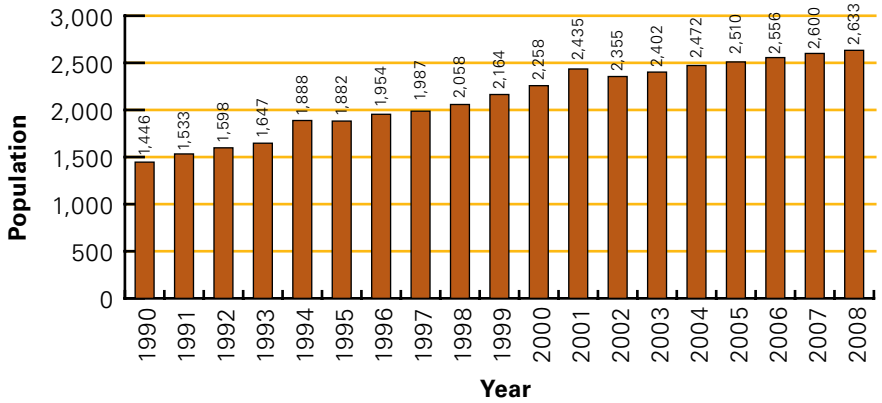
Community of Nelson House

Population

The Wuskwatim Generation Project Environmental Impact Assessment predicted a moderate amount of in- and out-migration at Nelson House associated with construction of the project. The possibility of in-migration is associated with the lure of well paying construction jobs as well as community-based training opportunities. It is anticipated that this type of migration will be mitigated somewhat by the use of a Job Referral System for hiring on the project, which allows individuals to register for employment without relocating closer to the project. Potential out-migration could occur as families with new construction income choose to relocate to more urban centers, such as Thompson, in order to access housing and other services unavailable in the community.

Data from Indian and Northern Affairs Canada (INAC) suggests that the population at Nelson House has remained relatively stable since the start of construction on Wuskwatim. As shown below, the total population at Nelson House increased from 2,510 to 2,633, an increase of 123 people, from the end of 2005 to the end of 2008. During this period the average annual growth rate was 1.6 per cent. This compares to an average annual growth rate of 2.3 per cent from 2000 to 2004.

NCN on-reserve population (1990–2008)



Source: INAC's Indian Registry System as of Dec. 31 of each year.

Discussions with key service providers from the Nelson House community confirmed that while some population in-migration at Nelson House has occurred as a result of project employment and training opportunities, the majority of growth in recent years has been the result of normal community population trends. Migration into the community is constrained by the availability of housing, as well as the availability of education and employment opportunities in other locations like Thompson.

NCN impact management process

NCN is working with WPLP to manage social effects through existing community-based organizations and service providers. WPLP is currently undertaking a survey of NCN members that have worked at Wuskwatim. Family members are also participating in this survey. The purpose of the survey is to better understand the changes that have occurred within NCN families and the community as a result of the project. It is hoped that the survey will also help the partners understand how workers found life at the construction camp, and assess whether the cultural and support programs were helpful. NCN members have been hired to conduct the survey in the community.

Once complete, survey results will be shared with key service providers from NCN for their information and for use in identifying and responding to any issues that may require attention. Results of the survey, and updates on the ongoing NCN impact management process, will be provided in future monitoring overviews.

City of Thompson

Population

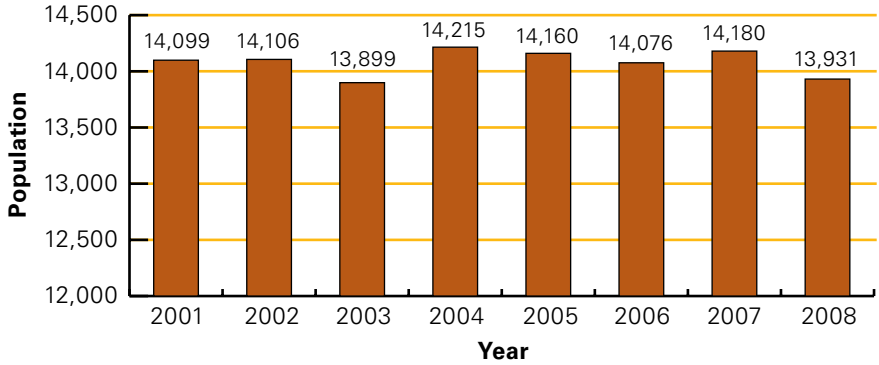
Thompson is the nearest industrial and commercial centre to the project and is a potentially significant contributor to the project workforce. There is also the potential that workers may take up residence in the community and/or visit the community during off-hours to take advantage of various services (restaurants, shopping). This type of migration can positively impact the local community economy, but can also place a temporary strain on existing infrastructure and services. Measures have been taken to minimize in-migration and off-hour worker visits to Thompson, including the construction of a camp at site outfitted with various recreational facilities for workers.

As shown in the chart on page 36, annual data from the Burntwood Regional Health Authority indicate that the Thompson population has not increased significantly during the construction of Wuskwatim. In fact, overall population declined from an eight-year high of approximately 14,215 in 2004 to approximately 13,930 in 2008.

It is important to note that Thompson is affected by a number of social and economic drivers. The conditions in the city are, and always have been, closely tied to the mining industry. Current population trends are influenced as much, or more so, by the previous expansion activities of Vale Inco and other large employers. This means it is difficult to assign responsibility for certain changes or trends to any one factor or industry.

It should also be noted that, as a regional service centre, Thompson has a large temporary population of temporary workers and Aboriginal people. A portion of this temporary population visit Thompson from outlying communities to access services, such as health care, that are not available to them at home. These individuals generally list their home community as their permanent place of residence. Service providers in Thompson have suggested that the current Thompson population would be closer to 18,000 if this temporary population was accounted for.

Thompson population (2001–2008)



Source: Manitoba Health Annual Health Statistics (http://www.gov.mb.ca/health/annstats/index.html)

Community infrastructure and services

During the 2008–09 reporting period discussions were held with key service providers in Thompson regarding potential project impacts on community infrastructure and services. As with population migration, while changes in demand on community infrastructure and services can be linked, in part, to the Wuskwatim project, it is the synergistic impact of all the growth factors in Thompson over the last few years that is likely causing certain community trends to be more pronounced.

While not directly linked to Wuskwatim, Thompson service providers have noticed certain challenging and ongoing trends in the community which could be exacerbated by further economic growth, including new construction income and any population migration. Service providers indicated that Thompson continues to experience a shortage of accommodation, particularly with respect to lower income housing and rental units. Due to growth in the local economy, including employment opportunities, Thompson is experiencing a shortage of workers in the retail and hospitality sector. This shortage has continued despite increased wages. Thompson service providers also indicated that they have noticed an increase in the number of homeless people in Thompson, as well as an increase in crime largely associated with gang activity.

Transportation monitoring

Traffic safety

Wuskwatim access road

The Wuskwatim access road connects Provincial Road (PR) 391 to the Wuskwatim Generating Station construction site. It is a private road with access restricted to a list of authorized users. Access is controlled by means of a gate at the PR 391/access road intersection. The gate office is staffed 24 hours per day, seven days per week, and security staff document all authorized vehicles entering and exiting the road.

The table below provides a summary of traffic use on the Wuskwatim access road during the reporting period. On average, 112 vehicles per day used the road from April 2007 to March 2008. This is an increase of 12 vehicles per day on average compared to the previous year. There was one motor vehicle accident along the access road during this reporting period.

Traffic using the Wuskwatim access road
Trips by month, with daily average (2008–2009)

	2008									2009			
	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Total
Total	4,743	3,972	3,523	4,052	4,027	4,718	3,897	2,794	1,795	1,922	2,134	3,445	41,022
Daily Average	158	128	117	131	130	157	126	93	58	62	76	111	112

Source: Manitoba Hydro
Note: one trip represents one round-trip (entry plus exit)

Provincial Road 391 (PR 391)

The Wuskwatim access road connects Provincial Road (PR) 391 to the Wuskwatim Generating Station. PR 391 is a two-lane secondary arterial that is paved for a 30-kilometre section west of Thompson, and gravelled beyond that point. Manitoba Infrastructure and Transportation classifies PR 391 as a seasonal Transportation Association of Canada (TAC) route. Between December 1 and the end of February of each year, gross vehicle weights of 62.5 tonnes are allowed. From March 1 to November 30 of each year, the weight limit is reduced to approximately 55 tonnes.[7] The posted speed limit is 90 km/h.

The table below provides a summary of traffic volumes for PR 391 for 2003, 2005 and 2007. The data suggests that traffic volumes have increased from 2005 to 2007, although they did not reach the levels recorded in 2003.

PR 391 highway traffic volumes (2003/2005/2007)

Year	Average AADT	Average ASDT
2003	186	131
2005	161	118
2007	167	121

Source: University of Manitoba Traffic Information Group (UMTIG).

Notes:

1. *AADT = Average Annual Daily Traffic (vehicles/day). This statistic provides an indication of the average usage of a road at a particular traffic station. The AADT estimates the typical daily traffic on a particular road segment for all days of the week (Sunday to Saturday) over a one-year period.*
2. *ASDT = Average Summer Daily Traffic (vehicles/day). The ASDT represents an estimate of typical daily traffic on a road segment for all days of the week (Sunday to Saturday) over the summer season (in Manitoba the summer season spans May 1 to September 30).*

Discussions with the Thompson RCMP indicate that traffic levels on PR 391 between Thompson and Nelson House have increased compared to one year ago (for passenger vehicle and transport trucks). Although no data are available on the number of collisions along this stretch of PR 391, members of the RCMP noted that the increased traffic has not led to a corresponding increase in vehicle collisions.

7 *ND LEA Engineers and Planners Inc. 2002. Wuskwatim Generation Station Transportation Review. Final report submitted to Manitoba Hydro.*

Navigation safety

During construction and operation of the generating station, new access to the Wuskwatim Lake area was expected to bring more people in contact with Wuskwatim Lake and areas downstream of the station on the Burntwood River. NCN and Manitoba Hydro have agreed to implement safety measures to mitigate potential effects associated with this new access and to assist resource users in reaching their traplines safely.

During this reporting period five winter trails were constructed around the Wuskwatim site. Two of these trails are currently available for use, while the remaining three have been decommissioned due to either conservation or safety concerns.

In 2007–08, two docks were installed on Wuskwatim Lake as part of the safety measures program. One dock is located near the Wuskwatim construction site and the other is located on the west side of Wuskwatim Lake at the old Wuskwatim village site. As planned, these docks were removed at the close of the season. They will be put in place again when conditions permit.

Two boat patrols are expected to be in operation in the Wuskwatim forebay in the coming year to monitor debris in the water and along the shoreline. Patrols will take place for approximately five months during the open water season.

There have been no incidents reported over the last year on Wuskwatim Lake or downstream on the Burntwood River. Updates on safety measures will be provided in subsequent monitoring reports as they are implemented. Danger signage will be developed and installed as required in the upcoming season.

Public Communication

WPLP is committed to providing the public with information about its monitoring activities and the results of monitoring studies undertaken each year. As part of its public communication activities, WPLP:

- Annually develops this Monitoring Overview document to summarize key outcomes from the previous year. This document is distributed to NCN members living both on- and off-reserve, and to various other stakeholders. The document is also available at the Wuskwatim site, the Wuskwatim Implementation Office in Nelson House, in the Public Registry, and on the WPLP website at www.wuskwatim.ca.
- WPLP's Wuskwatim Monitoring Advisory Committee annually schedules an open house in Nelson House to provide community members with up-to-date information on monitoring programs and to answer any related questions.
- This past year, WPLP's Wuskwatim Monitoring Advisory Committee made presentations on project-related environmental monitoring to grades 5 to 12 students at the Otetiskiwin Kiskinwamahtowekamik School in Nelson House.

Monitoring Advisory Committee presentation to students at Otetiskiwin Kiskinwamahtowekamik School in Nelson House.

WUSKWATIM

Power Limited Partnership