WUSKWATIM

Power Limited Partnership

Monitoring Overview

2007–08

Monitoring Overview for the period ending March 31, 2008

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WUSKWATIM
Power Limited Partnership

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Message from the Chair of the general partner of WPLP

Wuskwatim Power Limited Partnership (WPLP) is pleased to present its Monitoring Overview for the period ending March 31, 2008. 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. The Monitoring Overview summarizes results of the on-going monitoring programs that are an integral component of Wuskwatim's development process. This public document is not a required technical report for regulatory purposes.

It has been a very successful year for WPLP. Substantial work took place on the 48-kilometre access road to the site, the construction power substation and transmission line were completed and energized, and the main construction camp was very close to completion at fiscal year end. In addition, a Limited Scope of Work agreement for the General Civil Contract was negotiated in late 2007, by Manitoba Hydro acting as project manager. This agreement allowed work to start on the cofferdams, spillway channel and principal structures area. Many of our monitoring programs also began to switch into a new phase, shifting from gathering baseline data to monitoring the effects of construction activities — which, as predicted, have been minimal. Construction monitoring will continue right through until Wuskwatim is complete and in operation.

As the project manager for Wuskwatim, Manitoba Hydro is committed to the objectives set out in its Corporate Environmental Management Policy and Sustainable Development Guiding Principles. Manitoba Hydro prepared this overview for WPLP.

Ethinesewin — the traditional knowledge and wisdom of the Nisichawayasihk people — and conventional scientific analysis are being used equally as part of our overall monitoring activities. For the first time, traditional Aboriginal knowledge is helping to guide hydroelectric development in Manitoba's north. NCN elders inspected the construction areas over the past year, and their feedback and knowledge were invaluable in ensuring that project activities are conducted with the utmost respect for the land and NCN's traditional values and way of life.

Sincerely,

Ken R.F. Adams, P. Eng
Chair of the general partner of
Wuskwatim Power Limited Partnership
(5022649 Manitoba Ltd.)

Introduction

In our modern world, there is an ever-increasing need for electricity. Much of today's technology relies on electricity, and tomorrow's innovations will likely be no different. Manitoba, blessed with abundant water resources, is in a position to provide clean, renewable hydroelectric power that will help fuel growth and innovation both within our province, and in export markets across Canada and the United States. At the same time, the production of hydroelectricity in Manitoba helps to reduce greenhouse gas emissions locally and globally.

The Wuskwatim Generation Project, under construction on the Burntwood River in northern Manitoba, is being developed to take advantage of the growing demand for energy. Wuskwatim will bring 200 megawatts of self-renewing hydroelectricity to Manitoba's domestic and export markets. Designed as a low head, "run-of-river" plant, the construction of Wuskwatim will create less than one-half of one square kilometre of flooding — thereby minimizing local environmental impacts. This is the least amount of flooding for any hydro project ever developed in northern Manitoba.

The Wuskwatim Power Limited Partnership (WPLP), an entity involving Manitoba Hydro and the Nisichawayasihk Cree Nation (NCN), is developing the project. This is the first time in Canadian history that a First Nation and an electric utility have entered into a partnership to develop a major generating station. Wuskwatim is located in NCN's traditional territory at Taskinigup Falls, at the outlet of Wuskwatim Lake.

The Wuskwatim Project Development Agreement (PDA), approved by the community in June 2006, gives NCN the opportunity to own up to 33 per cent of the Wuskwatim Generating Station. NCN has made an initial investment of $1 million, and the First Nation has until the completion of construction, anticipated to be 2012, to make the balance of its equity investment. Manitoba Hydro is providing 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 impacts of the dam and establish the location of the construction camp and routes for the access road and transmission lines. Traditional knowledge will continue to be used — along with conventional environmental monitoring procedures — as a major source of information to help ensure there is minimum disruption to the local environment as the project moves through the various phases of construction and operation.

Project Status

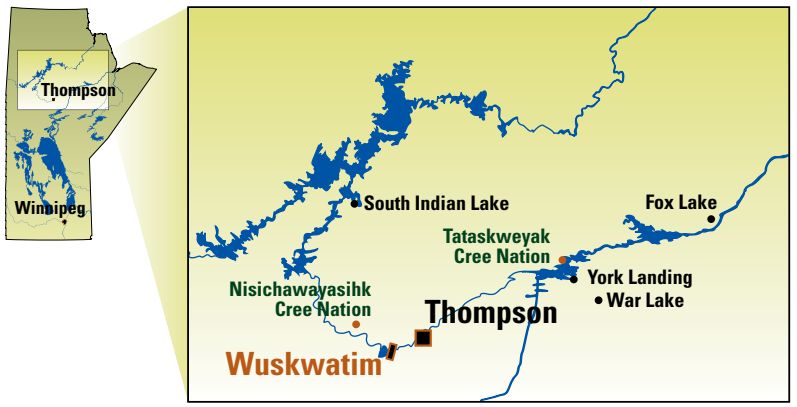
Over the past year, major activities on the Wuskwatim Generation Project included the continuation of construction of the all-weather access road to the station site, establishment and operation of the project's main construction camp, and commencement of work on the General Civil Contract (GCC).

Approximately 2.2 million cubic metres of granular material was excavated and placed on the 48-kilometre access road from Provincial Road 391 to the station site at Wuskwatim Falls. The main construction camp — featuring housing for over 600 workers, water and sewage treatment facilities and associated infrastructure, ambulance and fire buildings, kitchen/dining complex, recreation facility and cultural area — was nearing completion. The site's construction power substation and transmission line were completed in summer 2007.

In late 2007, work began under the Limited Scope of Work agreement of the GCC. Activities undertaken in this phase of the GCC included excavation of the spillway channel and principal structures area, and completion of the rockfill portions of Stage I upstream and downstream cofferdams.

As manager of the project for WPLP, Manitoba Hydro successfully awarded four contracts with a combined estimated value of over $37 million. Agreements were reached with General Electric Canada to accelerate the station's turbine and generator contracts. Additionally, Manitoba Hydro engaged in discussions with various contractors to undertake the next phases of GCC work. WPLP continues to maintain a project in-service date of 2012.

Throughout the past year, project employment peaked at just over 400 workers, and Aboriginal workers made up an average of two-thirds of the workforce. Several site ceremonies were performed at key construction milestones to demonstrate respect for — and mitigate the effects of project construction — on local culture. The Wuskwatim Generation Project represents the first time such ceremonies have been held during construction of Manitoba Hydro's major hydroelectric projects.



Wuskwatim Monitoring

This report presents an overview of monitoring activities undertaken for the Wuskwatim Generation Project between April 1, 2007 and March 31, 2008.

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 environmental approvals were issued at the culmination of an extensive regulatory and public review process, which included:

- public consultations
- environmental impact assessment (EIA) studies
- the preparation of an Environmental Impact Statement (EIS)
- technical reviews and assessments conducted by numerous government departments under the cooperative provincial/federal environmental assessment and review process
- participant assistance funding
- a public hearing and report by the Manitoba Clean Environment Commission
- preparation of a Comprehensive Study Report (CSR) by Fisheries and Oceans Canada, under the Canadian Environmental Assessment Act (CEAA).

In addition to monitoring required by regulators, Manitoba Hydro and NCN also made specific environmental monitoring and follow-up commitments in the Wuskwatim Generation Project Environmental Impact Statement (EIS), in accordance with accepted environmental assessment best practices and *Ethinesewin* (Aboriginal traditional knowledge). See the next section of this overview for additional details on the *Ethinesewin* program.

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)

An Interim Water Power Act Licence, issued by Manitoba Water Stewardship, also prescribes monitoring related to water levels and flows in the Burntwood River.

Under the Federal Fisheries Act, authorizations are issued for various components of the Wuskwatim Generation Project. These authorizations prescribe specific monitoring requirements related to the protection of fish and fish habitat. To date, authorizations have been issued for the stream crossings on the Wuskwatim access road and for various aspects of the Wuskwatim construction camp. Authorization for the construction component of the station was issued in November 2007. This allowed "in-stream" work in the Burntwood River to start, including placement of cofferdams to isolate areas where the spillway and powerhouse will be built.

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, is vital to ensuring the Wuskwatim Generation 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).

The objective of this program is to respect *Ethinesewin* by documenting and incorporating elder expertise and knowledge of the natural environment into project monitoring and assessment. Over the past year, elders from NCN inspected the project area on two occasions to provide *Ethinesewin* regarding both the aquatic and terrestrial environment.

The first inspection, from July 10 to 13, 2007, focused on the aquatic environment and investigated the effect of culvert installation on stream crossings. The area covered included the Wuskwatim access road, all nine stream crossings, and the water intake at Wuskwatim Lake. Elders confirmed that construction had been completed to allow for the passage of fish and fur-bearing animals through the culverts. At some stream crossings, medicinal plants were found and harvested, while at others the elders identified additional measures that could further enhance erosion protection and maintain stream flow. Elders did not identify any specific concerns regarding the water intake at Wuskwatim Lake. *Ethinesewin* provided by the elders supported the work that had been completed to ensure appropriate protection of the aquatic environment.

The second inspection — to assess the effect of construction on the terrestrial environment — was conducted from October 17 to 19, 2007. The observations again focused on the access road, as well as the construction camp area. During the inspection, elders observed that animals such as moose, bear, wolves, foxes and others would be able to cross anywhere along the length of the access road, with the exception of caribou which would cross mainly in the jack pine area. On a map, elders named all the stream crossings and marked movement areas of woodland caribou based on traditional knowledge. The elders cautioned that travellers along the road would need to exercise caution to avoid hitting animals that may cross the road.

WPLP will continue to work with the elders to incorporate *Ethinesewin* into the Wuskwatim Generation Project throughout construction.

Elders inspecting construction areas

Aquatic Effects Monitoring Program

Environmental monitoring associated with the Wuskwatim Generation Project can be divided into three separate phases: baseline monitoring; construction monitoring; and operation monitoring. Baseline monitoring occurs prior to the start of construction, and is designed to document the pre-project condition of aquatic habitat, water quality, benthic invertebrates, and the fish community. Construction monitoring focuses on short-term effects related to specific construction activities, while operation monitoring addresses long-term effects that may result from environmental changes associated with operating the completed station. Baseline monitoring results will be compared to results obtained from construction and operation monitoring in order to help understand any environmental changes that may take place.

Monitoring of construction effects at the stream crossings along the Wuskwatim access road began in 2006 and continued through the 2007–08 fiscal year.

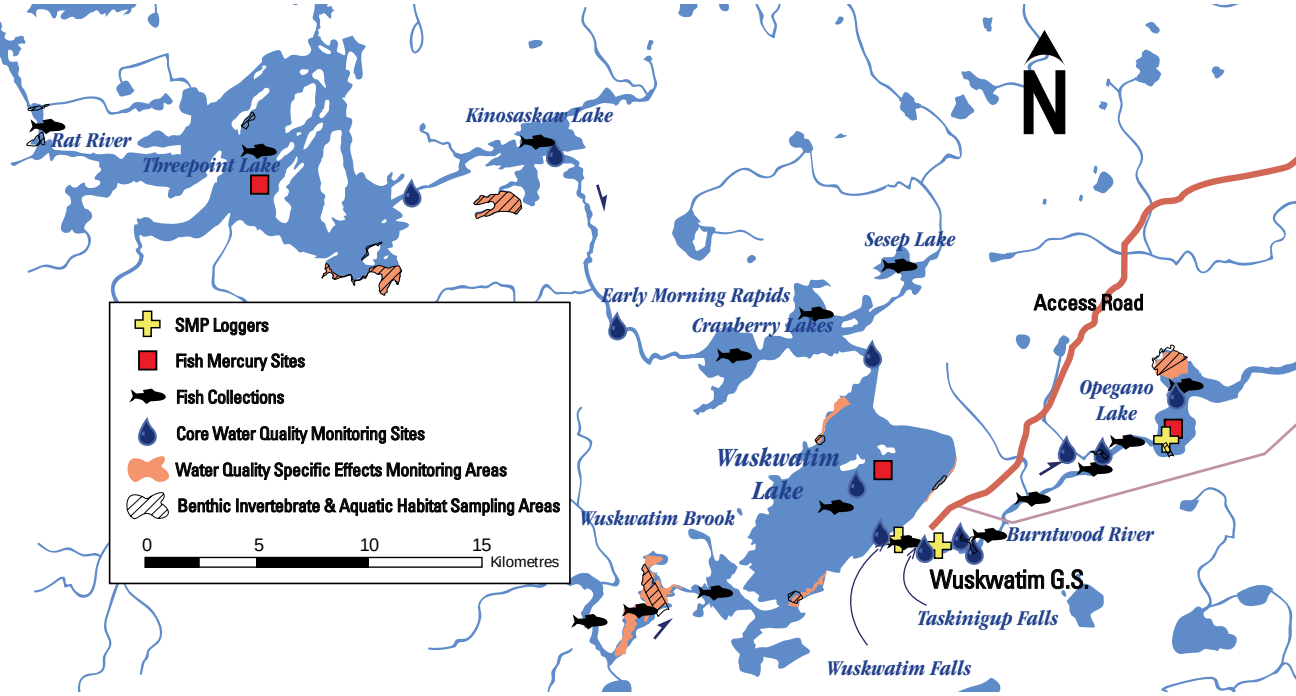
2007–08 marked a transition period from baseline to construction monitoring in other areas affected by the project. During the open-water season of 2007, the final year of baseline data was collected on Wuskwatim Lake, Opegano Lake and the reach of the Burntwood River connecting these two lakes. As in-stream construction on the project began in January 2008, construction monitoring also began.

Baseline monitoring

Water quality

Water quality samples were collected at sites along the Burntwood River from upstream of Wuskwatim Lake to the mouth of Split Lake. Results from sampling in 2007 and previous years will be used to document natural, background conditions and provide a basis for comparison to samples collected during construction and operation of the project. The results of these programs will be used to evaluate whether mitigation measures used during construction are effective.

Map of Aquatic Monitoring Sites



Aquatic habitat surveys

Changes in aquatic habitat are important to understand and monitor because these changes may impact fish and other aquatic life, such as benthic invertebrates. In 2007, baseline aquatic habitat surveys were completed. These surveys mapped plant growth and the texture of the lake bottom at sites in the project area, as well as reference areas not affected by project construction or operation. Natural changes recorded at reference sites may be used to determine if changes in the project area are natural or project related.

Benthic invertebrate monitoring

Benthic invertebrates are small organisms, such as worms, snails, crayfish, and the aquatic larvae of insects like mayflies, which live on the bottom of lakes and rivers. Benthic invertebrates are often used to assess environmental change because they don't move around much, respond relatively quickly to changes in habitat, and are an important component of the aquatic ecosystem. Consequently, at sites where aquatic habitat surveys were completed, the benthic invertebrate community was studied to document baseline conditions prior to construction (see map above).

Fish community

Fish species in both the reference and study areas were examined. The monitoring program included large-bodied species important to commercial and domestic fisheries (including walleye, whitefish, and northern pike), non-economic species (such as sucker), and small forage fish. A variety of sampling techniques were used to obtain information on general species presence and relative abundance, growth and age. In addition, a sentinel species program using white sucker was conducted to detect changes in fish community health.

Fish quality

The concentration of mercury in fish can be affected by flooding caused by hydroelectric development. Due to the small area that will be flooded by the Wuskwatim Generation Project, no impacts to mercury levels in fish are expected. However, to verify this prediction, mercury levels in fish upstream and downstream of the project site are being monitored.

Construction monitoring

Aquatic monitoring at stream crossings

Nine stream crossings — eight along the Wuskwatim access road and one through the camp — were built with culverts. Two water quality parameters, turbidity and total suspended solids (TSS), were used to monitor aquatic ecosystem impacts from stream crossing construction. In-stream turbidity was measured before, during and after construction using turbidity loggers. Additional turbidity measurements were taken periodically with a hand-held meter, and water samples were collected for laboratory analysis of TSS.

The monitoring data indicated that turbidity and TSS concentrations were moderately elevated during construction activities and returned to baseline levels two to three days after construction was complete. Turbidity and TSS monitoring conducted during construction was affected by the season. For example, at stream crossing one, a complete record of turbidity and TSS concentrations were obtained as construction was completed prior to winter. In contrast, the remaining stream crossings were built during winter, when assessing turbidity and TSS was more difficult due to the presence of ice and reduced water flows. Typically, turbidity increased during stream diversion and culvert installation and returned to baseline levels two to three days after the stream was diverted back through the culvert.

Monitoring in spring 2007 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. Turbidity and total suspended

sediments were also measured at all crossings during spring runoff to assess whether mitigation measures put in place to prevent erosion and sediment entry into streams were adequate. When observations were made that sediment was entering streams, additional measures such as silt fences, geo-textile, and rip-rap were installed to mitigate erosion and prevent sediment from entering the streams. When access road construction is complete, these temporary erosion control measures will no longer be required as vegetation established in ditches and other areas disturbed by road construction, will provide natural erosion control.

Fish salvage assessment — cofferdam construction

The authorization issued by DFO required fish to be salvaged from areas de-watered by the construction of cofferdams. Between January and March 2008, cofferdams were constructed in the Burntwood River; however, only construction of one small cofferdam resulted in dewatering of potential fish habitat, in this case a small channel parallel to the main flow of Taskinigup Falls. Ice and snow conditions prevented access to the channel to conduct fish salvage; however, it was expected that few, if any, fish would be present due to the high velocities of the water prior to construction of the cofferdam and minimal area taken up by the channel.

Terrestrial Effects Monitoring Program

Terrestrial habitat and vegetation monitoring

Invasive species monitoring

Vegetation monitoring is essential to protect rare species and prevent the establishment of new, invasive species. A survey of the access road and construction camp area was conducted in August 2007. The survey assessed the success of construction mitigation measures used to avoid marked sensitive vegetation and flagged areas. The survey also examined the area for invasive plant species. None were found.

Mammal monitoring

Monitoring of mammals in the construction area is performed to identify any change in habitat preference or use. Mammal monitoring took place in June, July and August of 2007, by field crews walking nine-kilometre transects. Transects were investigated adjacent to the access road, at the generating station site, as well as at a reference area near Harding Lake. As each transect was walked, signs of wildlife — including woodland caribou — were recorded.

Analyses completed to date have focused on woodland caribou, moose and black bear populations. Based on comparisons between 2007 and the pre-construction period, it would appear — to date — that caribou distribution and habitat preferences have not been affected by the access road. In contrast, the number of moose and black bear adjacent to the road appears to be increasing. The movement of moose and black bears toward the road may be a result of increased potential food sources or other attractants near the roadway.

Mammal sightings

There have been numerous mammal sightings in the project area. The Environmental Supervisor at Wuskwatim records all mammal sightings for future reference. Moose observations were made at stream crossings along the access road a number of times. A moose cow and calf were also observed at the Wuskwatim site. Construction camps have been the location of all black bear sightings. Caribou sightings were made in a borrow area and at the site of the main construction camp. A pack of seven wolves was observed travelling along the access road, as were a family of lynx.

Wapisu Caribou Committee

The Wapisu Caribou Committee (WCC) is comprised of Manitoba Hydro, NCN and government regulators. Its purpose is to oversee caribou monitoring on the Wuskwatim project and provide recommendations on adaptive management for the protection of the Wapisu woodland caribou herd. In 2007, the Committee worked with local NCN members to produce a brochure highlighting the importance of woodland caribou to NCN. The brochure provides important information on herd distribution, habitat preferences, and the elders' perspectives on the cultural significance of woodland caribou. Community members have an essential role in ensuring that this threatened species is protected, and the brochure highlights NCN's traditional perspective on the need for protection of and respect for the Wapisu caribou.

It came to the attention of the WCC that a harvest of 10 woodland caribou took place at the end of March 2008. The herd was accessed via a trail that had been cleared as part of the Adverse Effects Agreement for the Wuskwatim Project, and which is designed to provide for safe movement of NCN members traveling in the Wuskwatim Lake area.

As the trail is linked to the Wuskwatim project, the WCC developed an action plan to address this unanticipated project impact. The committee has made a recommendation to the Wuskwatim Board that this trail be closed. The Board accepted the recommendation and the trail will be closed, if approved by the signatories of the Adverse Effects Agreement. Further education and awareness initiatives are planned and close monitoring of the herd and resource harvesting activities in the area will continue.

Bird monitoring

Surveys of breeding birds were conducted along transects adjacent to the access road and the generating station site in May 2007. The intent of these studies was to determine the extent to which song bird distribution in areas adjacent to the road and generating station site has been affected by construction. Preliminary analyses indicate that overall numbers have increased, likely due to the preference of several species for edge habitat, which was created by clearing.

Heritage Resources Protection Plan

During the clearing of the site camp a single bone element was discovered. The bone was identified to be that of a moose. A field assessment was also conducted at the site of the bone find to establish whether additional bone or heritage objects were present. No heritage resources were identified during the examination.

NCN's archaeologist and Northern Lights Heritage Services staff were onsite to conduct heritage resource monitoring during the construction of the initial cofferdam to close off a chute of water. Due to extreme winter conditions, specifically ice overhang and snow, access to the area that was to be assessed following de-watering was not possible. The water will be removed from the enclosed area in the summer of 2008 allowing the archaeological team to investigate this area for heritage resources.

Sediment Management Plan

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 January 2008, in-stream construction began with the initial cofferdams at Taskinigup Falls.

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 decisions to be made to help ensure that regulatory limits with regard to TSS levels are met.

During in-stream construction there was no change detected in turbidity at Opegano Lake, and only a few very small increases at the site immediately downstream. These were not long lasting and no alterations to construction practices were required.

All the monitoring results from this process were sent to DFO on a daily basis for review.

Physical Environment Monitoring

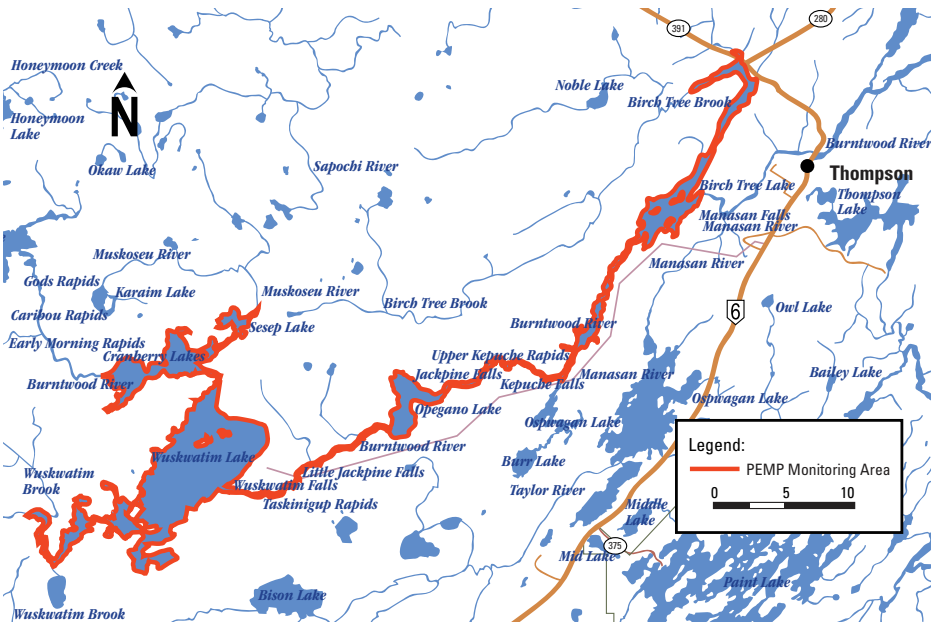
The Physical Environment Monitoring Program (PEMP) is an adaptive program designed to measure various components of the physical environment that may experience some form of change from the construction and operation of the Wuskwatim Generation Project.

Components of the physical environment addressed in the PEMP include:

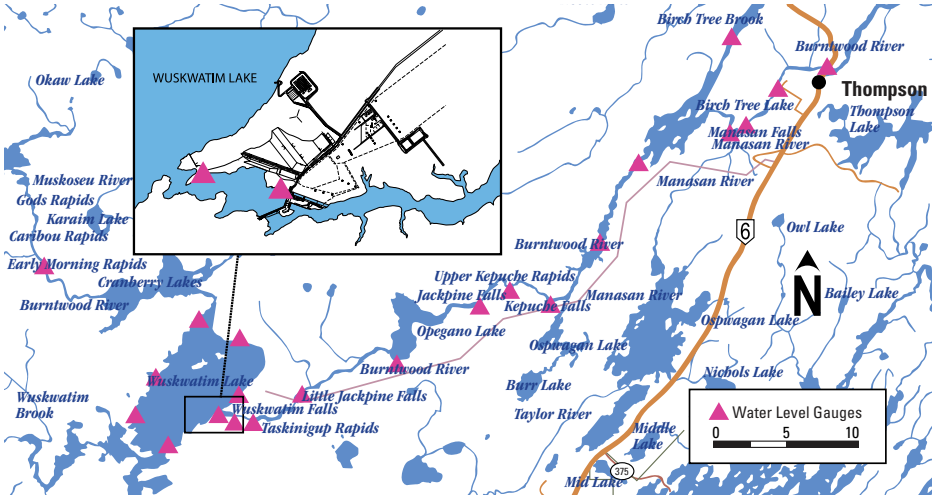
- climate
- water regime
- erosion
- sediment transport
- woody debris

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.



2007–08 marked a transition period from baseline to construction monitoring. During the open-water season of 2007, the final year of baseline data was collected in the PEMP study area. Construction monitoring began in January 2008 when in-stream construction commenced. Results from baseline monitoring will be compared to construction and operation monitoring results in order to determine if environmental change has occurred.

Climate and water regime

The Environment Canada weather station located on Wuskwatim Lake experienced a number of malfunctions resulting in periods where no precipitation or wind information was collected. Plans are being developed to improve the reliability of weather monitoring in the Wuskwatim project area. This data will provide a baseline so that pre-construction and post construction trends can be reviewed in the future.

In 2007, two water level gauges were installed in the forebay area (see above) in addition to those set up in 2005 on Wuskwatim and Birch Tree lakes. These gauges continued to collect data about the operation of the existing system. This information will be used to determine which of the water level gauges will become part of the water level monitoring network once the Wuskwatim Generating Station begins operating.

With the beginning of the in-stream construction activities in early 2008, the gauges recorded an expected rise in local water levels of approximately 0.6 metres in the immediate area upstream of Taskinigup Falls and downstream of Wuskwatim Falls. As predicted, there was no change in the water level on Wuskwatim Lake or downstream of the construction area as a result of construction activities.

Erosion and sediment transport

Erosion is the movement of the top-of-bluff of a shoreline — either lakeshore or riverbank — or the movement of the bank downwards towards the river. Monitoring activities consist of surveying the shape of the bank and comparing the position of the bank from year to year.

The Wuskwatim Generation Project has 35 erosion monitoring sites and over 80 sediment monitoring sites. Each site was visited at least once during the summer of 2007 to continue the collection of baseline data. 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.

During the past year, erosion monitoring sites located on lakes generally showed more erosion compared to existing conditions in the period 2006–07, without any influence from the project. The most recent data indicates that there has been negligible (less than 0.25 metres) top-of-bluff recession at half of the monitoring sites on the lakes, with the rest experiencing greater than one metre of recession.

At two of the river monitoring sites, the most recent data indicated that there has been negligible (less than 0.25 metres) movement, while one site experienced a moderate amount of movement (between 0.25 and 0.99 metres). This is consistent with the past monitoring of erosion at these sites where limited erosion had been observed.

During summer of 2007, the sediment transport program collected baseline data. In the fall the program was adapted to accommodate the plan for winter in-stream construction activities. Monitoring devices were modified and installed in Birch Tree Lake and other locations further downstream to monitor water quality under the ice during the construction period. Coincident water samples were also taken to measure total suspended solids. In January 2008, the first set of data coinciding with in-stream

Wuskwatim Lake erosion monitoring site with erosion occurring

Burntwood River erosion monitoring site where no erosion is occurring

construction in the downstream sections of the project area was collected. Initial assessment of that information indicated that, as predicted, there were no abnormal changes to water quality downstream of the project area due to in-stream construction.

Woody debris

The Manitoba Hydro waterways management team undertook several initiatives in the project area related to waterway safety. These included woody debris cleanup associated with existing Manitoba Hydro operations and a waterway safety inspection on Wuskwatim Lake. Two docks were installed on Wuskwatim Lake as part of the safety measures program. Debris was removed from the area where the docks were installed.

Socio-economic Monitoring

Economic monitoring

The Wuskwatim Generation Project influences the economy of Manitoba in a variety of ways:

- employment
- labour income
- purchases
- tax revenues
- contributions to provincial gross domestic product (GDP)

Job and 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 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 the initial investment in the project 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 come from the spending and re-spending of direct and indirect income generated by the project in the community, increasing sales for consumer goods businesses and the businesses that supply them. 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 2008. Information is also available 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. Data is not currently 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 2008 include:

	Total
Person-years of direct employment	421
$Millions of direct project purchases	$147
$Millions of direct labour income	$21.9
$Millions in direct federal & provincial taxes	$16.3

Employment

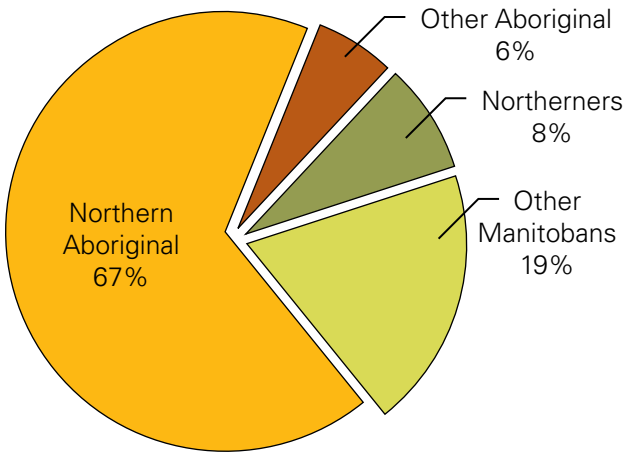
Traditionally, employment is measured by the number of jobs or "hires", referring to the number of people hired for any duration at the project site. However, when part-time and/or seasonal workers are used, this can be a misleading measure resulting in an overstatement of the economic impact of a project.

Person-years of employment

An accepted method to standardize the concept of hires is to define a person-year of employment. A person-year of employment is the same as a full-time equivalent (FTE), or one full-time job for one year. This typically represents about 2,000 hours of work.

From the start of construction to the end of March 31, 2008, direct employment created on the project amounted to 421 person-years of employment. Nearly 95 per cent or 400 person-years represent Manitoba employment. Total northern Manitoba and northern Manitoba Aboriginal employment impacts represent approximately 75 per cent (299 person-years) and 67 per cent (269 person-years) respectively of Manitoba employment. The chart below provides a breakdown of the Manitoba person-years of employment.

Project-to-date person-years of employment breakdown in Manitoba



Hires on the project

As of March 31, 2008, there were 949 hires including 627 Aboriginal hires. Of the 949, 870 or 92 per cent were Manitobans. Total northern and northern Aboriginal hires represent approximately 75 per cent (651 hires) and 69 per cent (565 hires), respectively, of Manitoba hires. Total Aboriginal hires included 519 Status, 99 Métis, and 9 other (Inuit and non-Status). To date, there have been a total of 259 NCN hires on the project.

Breakdown of total project hires by job classification from the start of construction to March 31, 2008

Job Classification	Total # of Hires	Aboriginal	Non-Aboriginal
Operating Engineers (Crane and Equipment)	195	127	68
Caterer	152	150	2
Labourer	122	105	17
Teamster	112	95	17
Carpenter & Millwright	48	23	25
Office and Professional	44	28	16
Electrical Worker	34	13	21
Security Guard	32	28	4
Pipefitter and Plumber	14	4	10
Ironworker & Rodmen	12	6	6
Sheeter, Decker & Cladder	8	5	3
Floor Coverer	7	0	7
Glass Worker	5	0	5
Plasterer & Cement Mason	4	1	3
Sheet Metal Worker	4	1	3
Roofer	3	0	3
Insulator	1	0	1
Other*	152	41	111
Total	**949**	**627**	**322**

** 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 on-site staff and certain technical staff (engineers and technicians).*

Employee turnover

Since project inception to March 31, 2008, there have been 224 incidences where employees were discharged or resigned. This represents a rate of turnover of 24 per cent of total hires. Of the 224 incidences where employees were discharged or resigned, 198 reported being of aboriginal descent. This represents a 32 per cent rate of turnover among Aboriginal hires.[1]

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 aboriginals seeking employment on the project.

Pre-project training, designed to provide participants with the skills necessary to find employment in a wide range of occupations during the construction of Wuskwatim and 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 provides money to community-based First Nation organizations who in turn offer training to community residents. At NCN, training is provided through the Atoskiwin Training and Employment Centre (ATEC). To date, ATEC graduates have found employment on Wuskwatim in a wide variety of fields, including carpentry, catering, brush cleaning, and heavy equipment operation.

In addition to pre-project training through WKTC, approximately $1 million has also been spent on providing specialized on-the-job training at the Wuskwatim site itself.

1 Turnover calculated as total incidences of discharged and resignations divided by total hires. The total number of resignations may include circumstances where individuals left a position but were rehired to improve their job level on site.

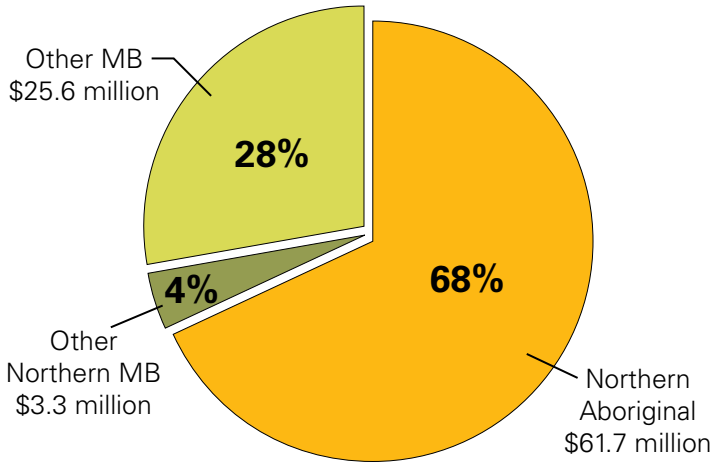
Purchasing

To the end of March 31, 2008 a total of $147 million was spent on goods and services for the project. Of this, $90.6 million were Manitoba purchases. Total northern Manitoba (Aboriginal and non-Aboriginal) purchases represent 72 per cent or $65 million of total Manitoba purchases. Total northern Manitoba Aboriginal purchases represent 68 per cent or $61.7 million of total Manitoba purchases. Another $1.5 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 2008

	$Millions	% of Total
Manitoba	**$90.6**	**62%**
Outside of Manitoba	$54.9	37%
Other	$1.5	1%
Total	**$147.0**	**100%**

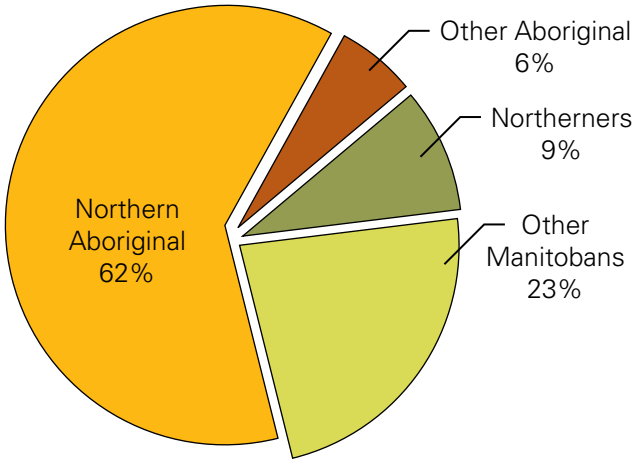
Breakdown of Manitoba purchases



Labour income

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, 2008 is approximately $ 21.9 million[2]. Nearly 93 per cent or $20.4 million represents labour income associated with direct Manitoba employment. Total northern Manitoba and northern Manitoba Aboriginal direct labour income impacts represent approximately 71 per cent ($14.5 million) and 62 per cent ($12.6 million) respectively of the total Manitoba direct labour income. The chart below provides a breakdown of the estimated labour income.

Project-to-date labour income breakdown in Manitoba



Tax revenues

The Wuskwatim Generation Project also contributes to government revenues. This includes 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.

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2 Labour income is calculated based on information provided by contractors and Manitoba Hydro. Data was not available for some supervisory positions.

The estimate of tax impacts to the end of March 2008 is $16.3 million and includes $0.5 million in payroll taxes[3], $5.6 million in personal income taxes[4], $2.7 million in capital tax, $0.6 million in fuel tax[5] and $6.9 million in provincial sales tax[6].

Indirect and induced economic impacts

The Wuskwatim Socio-economic Effects Monitoring Plan requires that a survey of indirect and induced impacts on businesses be conducted near the end of infrastructure (road and camps) construction activity. This survey was conducted in early 2008.

Indirect purchases and employment and labour income in local economies are created by the project with other spin-off impacts on the local businesses. The communities of Thompson (nearest industrial and commercial center to the project) and Nelson House (closest community in proximity to the project) were surveyed to determine indirect and induced employment and business opportunities generated by the Wuskwatim Generation Project from January to December 2007.

The information gathered included:

- expenditure data for 2007 obtained from Manitoba Hydro and the primary contractors for purchases from Thompson and Nelson House businesses
- focus group session in Thompson with representation from the business community, and municipal and provincial governments
- surveys of a cross-section of individual businesses in Thompson and Nelson House

3 Health and Post-secondary Education Tax is calculated as 2.15 per cent of the estimated labour income of $21.9 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 Fuel tax estimate does not include all fuel purchases by the project, as not all data was available at the time of reporting. 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.

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

The main contractors spent $12.8 million in Thompson and $4.7 million in Nelson House businesses, exclusive of salaries. Expenditures occurred in the following sectors: construction (63%), retail/wholesale trade (30%), transportation (3.5%), accommodation and food services (2.5%), specialty services (0.5%), and other (0.5%).

The focus group session and surveys in Thompson revealed that it is not only the impacts of Wuskwatim construction but rather the multiplicity of growth sources in Thompson (e.g., Inco's mine expansion) that are contributing to the strong growth in the business community. Overall, the study revealed that Wuskwatim has had a positive impact on the Thompson business community. The positive impacts include increases in businesses gross revenues and growth in indirect new jobs. The focus group and survey interviews confirmed the view that there was a direct effect on certain sectors with a trickledown effect into others.

The positive impacts on businesses in Thompson have also had some effects such as increases in gross costs, wage rates, employee turnover and pressure on housing availability. Although the negative impacts can be linked, in part, to Wuskwatim, it is the synergistic impact of all the growth factors in Thompson at this time that is causing the effects to be more pronounced.

Survey interviews for Nelson House businesses revealed mixed results. Only three out of the six contacted for the survey participated (relative to 24 out of 38 contacted in Thompson); therefore, it was difficult to determine if local businesses were experiencing additional levels of activity due to spending by local residents employed in Wuskwatim construction jobs.

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 counseling services, and cultural ceremonies prior to many key construction activities. Under contract, NCN provides cross-cultural and retention support programming on-site.

Cultural awareness training

The purpose of cross-cultural awareness training is to assess and address the challenges that arise out of cultural differences experienced on the job site and interactions between employees and nearby communities. The cultural awareness training program includes one-day and half-day sessions (depending on the level of the employee's job responsibilities) and a two-hour refresher course. Training sessions consist of facilitated face-to-face awareness workshops delivered by qualified NCN members.

Over the past fiscal year, seven cultural awareness workshops were held, which were attended by a total of 88 workers and 15 supervisory and management staff.

On-site counseling

On-site counseling 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 counseling sessions and to meet with community elders.

On-site counseling services were available all year and informational brochures were made available to publicize the service.

Cultural site ceremonies

Site ceremonies were 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 were organized by NCN spiritual leaders, and attended by Manitoba Hydro staff and NCN members. To the end of March 2008, there were two spirit ceremonies, a spring ceremony, a ceremony for the main camp, a ceremony to mark the Manitoba Indigenous Games, two blessing ceremonies and a transmission line ceremony.

NCN impact management process

Manitoba Hydro and NCN have been working together to monitor project impacts on NCN construction workers and their spouses. This will be addressed with a Worker-Family Survey that will look at a full range of issues including employment, individual and family adjustments to work schedules, understanding of the project, and its influences on the community. During the last year, the questionnaire and methodology for the survey were finalized.

Once the survey has been completed, the 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. The results of the survey and updates on the NCN impact management process will be provided in future monitoring overviews.

Ongoing discussions with the City of Thompson

In its capacity as project manager for WPLP, Manitoba Hydro has continued to meet with representatives from the City of Thompson, as necessary, during the fiscal year. A series of meetings with Thompson representatives is being scheduled for late spring/early summer 2008 to follow-up on the discussions that were held in August 2006 and March 2007. These will include, but not necessarily be limited to, Thompson City Council, the Burntwood Regional Health Authority, Thompson RCMP, Thompson Fire Department and EMS, Thompson Airport Authority and the Local Government District of Mystery Lake. The results of the follow-up meetings will be provided in the next monitoring overview. To date, general feedback from local businesses and stakeholders has continued to be positive and supportive of the development.

Transportation monitoring

Traffic Safety

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, 100 vehicles per day used the road from April 2007 to March 2008. There were a total of four motor vehicle accidents during this time, three of which involved vehicles going off the road into the ditch. The fourth involved a contractor's pickup truck sliding into heavy equipment on the road. None of the accidents resulted in serious injuries. Information for traffic on PR 391 is compiled by Manitoba Infrastructure and Transportation every two years. Unfortunately, the current traffic information for PR 391 was not yet available at the time of printing. This information is expected to be included in the 2008–09 report.

Traffic using the Wuskwatim Access Road
Trips by month, with daily average (2007–2008)

	2007									2008			
	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Total
Total	4 750	4 273	4 258	3 038	2 561	2 684	2 656	2 245	2 245	2 696	2 667	2 569	36 642
Daily Average	158	138	142	98	83	89	86	75	75	87	92	83	100

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

Navigation safety

During construction and operation of the generating station, new access to the Wuskwatim Lake area may bring more people in contact with Wuskwatim Lake and areas downstream of the station on the Burntwood River. New access safety measures are required to mitigate potential effects caused by this new access. 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 NCN old village site. Three winter safe haven cabin were built at Three Point Lake, near God's Rapids, and at mid-trail on Honeymoon Lake. New signage regarding potential navigational hazards will be put in place as construction progresses.

In addition, a new boat patrol will operate in the Wuskwatim forebay as construction progresses and during the first years of plant operation to monitor debris in the water and along the shoreline. Patrols will take place two to three times per week for approximately six months each year during the open water season. Any reported incidents on Wuskwatim Lake and downstream on the Burntwood River will also be tracked. Updates on these new safety measures will be provided in subsequent monitoring reports as they are implemented.


Manitoba Hydro
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WUSKWATIM

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