



WUSKWATIM

Power Limited Partnership

Monitoring
Overview

2010–11



Monitoring Overview for the period ending March 31, 2011

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Contents

2 Message from the Chair of the general partner of WPLP

4 Introduction

6 Project Status

8 Wuskwatim Monitoring

10 Environmental Protection Plans

14 *Ethinesewin*

16 Aquatic Effects Monitoring Program

16 Construction monitoring

16 Wastewater quality monitoring

17 Water quality monitoring

17 Benthic invertebrate monitoring

17 Fish salvage

18 No Net Loss Plan

18 Construction of compensation works

19 Soil bioengineering

20 Terrestrial Effects Monitoring Program

20 Mammal monitoring

21 Wapisu Caribou Committee

22 Aquatic mammal monitoring

22 Shoreline wetland habitat composition

23 Shoreline invasive plants

23 White spruce and balsam fir regeneration

24 Sediment Management Plan

26 Heritage Resource Protection Plan

28 Physical Environment Monitoring Program

28 Climate, water regime and reservoir greenhouse gas monitoring

29 Physiography

29 Sediment transport

29 Woody debris

30 Socio-economic Monitoring

30 Economic monitoring

38 Social monitoring

44 Public Communication



Message from the Chair of the general partner of WPLP



Wuskwatim Power Limited Partnership (WPLP) is pleased to present the 2010–11 Monitoring Overview for the period ending March 31, 2011. 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 Monitoring Overview is a public document summarizing the results of ongoing monitoring programs being undertaken as part of the

development of Wuskwatim. Separate technical reports are filed annually with regulators under the terms and conditions of the Wuskwatim Environmental Protection Program and are available for review on the public registry.

A major project milestone was reached in August 2010 when the Burntwood River at Taskinigup Falls was closed off with a new cofferdam. The cofferdam stopped the natural flow of the river and diverted it through the station's spillway structure, allowing workers to begin building the main dam in dry conditions. To commemorate the river diversion, a special ceremony was held at Wuskwatim. The event, attended by NCN Elders, Chief and Council members and Manitoba Hydro representatives, featured a pipe ceremony, sweat lodge and spiritual offerings at the river's edge.



The inclusion of *Ethinesewin* – the traditional knowledge and collective wisdom of Nisichawayasihk people – as part of this document is a unique and important component of the monitoring programs for the Wuskwatim Generation Project. *Ethinesewin* will continue to be used, along with conventional environmental monitoring procedures, as a major source of information to help ensure there is minimal disruption to the local environment as the project moves toward completion. Monitoring programs began prior to construction and will continue into project operation. As in previous years, project monitoring continued for water and land resources, as well as potential effects on people and economies.

Manitoba Hydro manages the project on behalf of WPLP, ensuring consistency with its Corporate Environmental Management Policy and Sustainable Development Guiding Principles. The following overview was developed by NCN and Manitoba Hydro on behalf of WPLP.

Sincerely,

Ken R.F. Adams, P. Eng

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



Introduction

Manitoba has a large, self-renewing supply of water power available to meet the demand for electricity within the province and in export markets. The 200-megawatt Wuskwatim Generating Station under construction in northern Manitoba is being developed to harness that power and take advantage of the growing demand for clean, renewable hydroelectricity. Designed as a low head, “run-of-river” plant, Wuskwatim will create less than one-half of one square kilometre of flooding, minimizing local environmental impacts.

The Wuskwatim Power Limited Partnership (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 hydroelectric generating station. Wuskwatim is located in NCN’s traditional territory at Taskinigup Falls, at the outlet of Wuskwatim Lake on the Burntwood River.

In June 2006, the Wuskwatim Project Development Agreement (PDA) was approved by NCN. The PDA provides NCN the opportunity to own up to 33 per cent of the Wuskwatim Generating Station. NCN will make a decision regarding its level of ownership after the first unit is in service (anticipated to be early 2012). Manitoba Hydro continues to provide construction and management services to WPLP.



River closure at Taskinigung Falls — August 2010

An essential part of the Wuskwatim planning process is the use of *Ethinesewin* (the traditional knowledge and collective wisdom of Nisichawayasihk people) which helps reduce adverse effects of the generating station, and helped establish the location of the construction camp and routes for the access road and transmission lines. To ensure there is minimum disruption to the local environment as the project moves through the various phases of construction, traditional knowledge and conventional science continue to be used equally as part of project monitoring activities. Traditional ceremonies, led by NCN Citizens, have been undertaken to express respect for the land and resources which helps to mitigate the effect of the project on culture and heritage.

All monitoring activities for the project are overseen by the Monitoring Advisory Committee (MAC) made up of NCN Citizens and Manitoba Hydro staff involved in the various monitoring programs. This committee meets bimonthly to discuss the monitoring being undertaken to follow-up on predictions made in the Environmental Impact Assessment. The MAC is also responsible for overseeing production of this document.

Project Status

Significant progress was made during the past year on the Wuskwatim Generating Station. All concrete has been placed to complete the spillway, service bay, intake and tailrace. Concrete placement to complete the powerhouse and miscellaneous structures will be complete in 2011. Installation of the turbines and generators is also progressing. Installation of the spillway gates was completed in July 2010 allowing the gates to be opened to pass water.

In August 2010, a major construction milestone was reached when the Burntwood River at Taskinigup Falls was closed off with a new cofferdam. This allowed the entire flow of the river to be diverted through the station's spillway. Construction of the main dam commenced behind the cofferdam and will be completed in 2011. Another cofferdam was installed downstream to isolate the tailrace area. The water that was ponded inside the cofferdam was pumped out to allow for excavation of the tailrace channel in the dry.



Environmental monitoring and management programs continue to be undertaken in accordance with approvals from provincial and federal regulatory agencies. Monitoring programs began prior to and continue throughout the construction phase and into operations. Key environmental and social activities undertaken during this past year included:

- soil bioengineering work (shoreline stabilization using plants) at selected sites on Wuskwatim Lake
- a salvage fishery in the ponded area created by the new downstream cofferdam prior to and during dewatering
- planting jack pine seedlings to rehabilitate areas no longer required for construction
- distribution of an educational video on the Wapisu caribou herd to the high school in Nelson House
- intensive pedestrian survey and shovel testing as part of heritage resource investigations
- water quality, turbidity, sediment and bed load monitoring to determine the effect of in-water construction activities
- ongoing monitoring by Nisichawayasihk Cree Nation (NCN) of the project site and surrounding areas
- a survey of indirect and induced impacts on businesses in Thompson and Nelson House
- a river closing ceremony prior to diversion to recognize the change to the Burntwood River

Project employment peaked in July 2010 at approximately 1,050 workers. Aboriginal workers continued to comprise a significant proportion of the workforce — from the start of construction in August 2006 to March 2011, 39 per cent of total project hires or 41 per cent of total person-years of employment have been Aboriginal.

The Wuskwatim Power Limited Partnership spent almost \$144 million on goods and services purchased from northern Manitoba Aboriginal businesses, including several contracts with entities owned by NCN. Cross-cultural training sessions, cultural ceremonies and counseling services continue to be managed and provided at site by NCN and are available to all employees.



Wuskwatim Monitoring

This report presents an overview of monitoring activities undertaken for the Wuskwatim Generation Project between April 1, 2010 and March 31, 2011.

Monitoring for the construction phase of the project is being 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, an interim Water Power Act Licence and Fisheries Act Authorizations.

The Environment Act Licence for Wuskwatim, 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 of the generating station
- Aquatic Effects Monitoring Program
- Heritage Resources Protection Plan
- No Net Loss Plan (compensation plan for fish habitat loss)
- Physical Environment Monitoring Program
- Resource Use Monitoring Plan
- Road Access Management Plan
- Sediment Management Plan
- Socio-economic Monitoring Plan
- Terrestrial Effects Monitoring Program





Since the beginning of construction in August 2006, these plans and programs have been implemented and the results of monitoring activities have been summarized in annual Monitoring Overviews. The technical reports on monitoring work undertaken are submitted annually to Manitoba Conservation.

In 2010, a major milestone in the construction sequence was achieved with the diversion of the Burntwood River through the station's spillway. Aquatic monitoring activities undertaken at that time included turbidity monitoring as the spillway gates were systematically opened to minimize sediment inputs into the river.

Terrestrial monitoring in 2010 included aerial and ground surveys of aquatic fur bearers to determine current lodge locations and a pre-impoundment data collection to determine mercury levels in the muscle and livers of aquatic furbearers.

Physical environment monitoring included pre-impoundment greenhouse gas (GHG) monitoring. This study is the first of its kind in Manitoba to measure GHG emissions before flooding a forebay. Additionally, sedimentation monitoring took place during the intensive construction period in the summer of 2010, when cofferdams were being removed and constructed, and during diversion of the Burntwood River through the spillway for the first time. Observations were within ranges previously observed and did not indicate any changes due to the project.

Heritage resources were recovered during the intensive pedestrian survey and shovel testing that was conducted after the unearthing of a pre-European contact burial. A number of new artifacts were discovered at previously recorded heritage sites.

After five years of construction activities, socio-economic monitoring continues to provide information on the economic and social impacts resulting from the project. The project continues to contribute significantly to Manitoba's economy in terms of employment, labour income and tax revenues. The second survey of indirect and induced impacts was undertaken in 2010–11, reflecting the peak of activity during the general civil contract.



Environmental Protection Plans

Manitoba Hydro's Environmental Inspectors, also known as *Aski Kihche O'nanakachechikewuk* (AKOs), conduct compliance monitoring to ensure mitigation measures outlined in the Environmental Protection Plans, licences, permits and authorizations are followed during construction. AKOs are citizens of the Nisichawayasihk Cree Nation (NCN) and have the ability to understand and apply *Ethinesewin* and NCN's customary law principles while carrying out their daily activities.

Environmental protection plans were prepared for construction of the access road, camp and generating station. The plans outline measures to be implemented to minimize adverse environmental effects of construction. Daily field inspections cover a wide range of activities including actions by contractors, performance of completed works and success of areas where rehabilitation has been undertaken. Numerous efforts have been carried out to meet environmental requirements and compliance is confirmed by ongoing inspections. In the event environmental concerns and issues do arise, they are addressed quickly. The AKOs attend regular contractor meetings to discuss specific environmental issues requiring attention. Corrective action reports are used to track and document non-compliance issues or concerns that require specific remediation or mitigation measures to be taken by the contractor. AKOs inspected, monitored, and reported the following in the 2010–11 fiscal year.

Wastewater

An AKO issued a notice of non-compliance to a contractor for installing a wastewater holding tank without a permit and a warning was given to another contractor for attempting to install a tank without a permit. A permit from Manitoba Conservation is mandatory. Both contractors obtained the appropriate permit as a result.

A corrective action report was issued by the AKOs to the general contractor in March 2011 for an unauthorized wastewater discharge inside the generating station powerhouse building. Impacted areas were cleaned up of all contaminants and the AKOs were supplied with a written action plan designed to prevent re-occurrence.

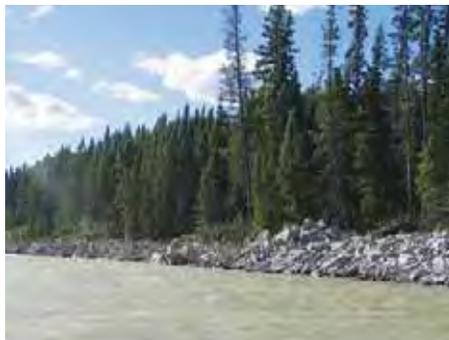
Maintenance of the concrete batch plant settling pond includes replacement of filter cloths on the berms between cells, and adding rock to the discharge ditch for erosion control. The AKO recommended to the contractor that the settling pond have all sediment deposits removed twice in 2010, once before summer concrete work began and once again in the fall before winter operation.

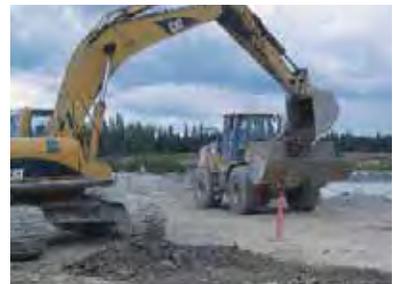
In April 2010, the contractor removed the ice, scraped out the accumulated sediments and disposed of them off-site. New filter cloths were placed on the berms of all the cells and additional rock was added to the discharge ditch. These actions greatly improved the capacity of the concrete settling ponds to reduce turbidity, allowing sediments to settle before discharge. Turbidity testing is conducted in the final cell, to confirm that sediments are captured in the pond and do not enter the Burntwood River.

Construction

Water that collects within any enclosed area at the generating station site (cofferdams, etc.) is required to meet specific turbidity levels prior to release into the Burntwood River. The spillway channel accumulated water, prior to diversion, as the rock plug at the downstream end was still in place. When the total suspended solids level in the accumulated water was higher than that of the river, the water was directed down a rock-lined channel and into the concrete batch plant settling ponds, allowing sediments to settle out prior to release into the river.

Once the Burntwood River was diverted through the spillway, it became evident in August 2010 that the north shore of the river, downstream of the spillway, was being eroded by the fast moving water. Mitigation was recommended by the AKOs, and the contractor placed rock armouring on the shoreline to stabilize the bank and prevent erosion. As a preventative measure, rock armouring was placed on the south shore of the river as well.





J 5 Borrow Pit Rehabilitation

Spill mitigation

The general contractor retained Nisichawayasihk Construction Limited Partnership to perform hand clearing on the south side and more mechanical clearing on the north side of the forebay. A corrective action report was issued to the general contractor for disturbance and clearing of the surface organic layer at the forebay area. This disturbance of approximately 1,360 square metres of shoreline vegetation was not approved on the contractor drawings. The general contractor provided a detailed rehabilitation plan to mitigate erosion and sedimentation.

Site maintenance/remediation/rehabilitation

Joint field inspections began during the spring of 2010, between the Wuskwatim Construction Department and the general contractor along with their subcontractors regarding ongoing issues associated with general housekeeping and construction waste in the contractor work area. These meetings proved beneficial with respect to identifying non-compliance issues. Inspections have been extended to include the powerhouse, marshalling yards and excavated materials placement areas. General site housekeeping can be difficult to keep up with during large construction projects; however, the AKOs continue to be vigilant about site tidiness. The AKOs continue to educate site personnel about the importance of proper disposal and recycling of wastes.

Twelve minor hydraulic oil spills occurred during the 2010–11 construction season due to mechanical failures. Each was identified, reported and mitigated with no harmful effects on the environment. All volumes released fell below the provincial reporting

limit of 100 litres. Affected soils were sampled and sent for analysis. Remediation of contaminated soil was completed and properly documented.

The general contractor continues to demonstrate environmental due diligence regarding its work.

In June 2010, AKOs oversaw the planting of 1,280 jack pine seedlings as part of the rehabilitation of the J5 borrow area. The Forestry Branch of Manitoba Conservation and the AKOs are monitoring the trees to assess the success of the revegetation project.

Wildlife

Over the last year, black bear, moose and other animals were observed along the access road. There was also some wildlife activity closer to the project site. In the summer of 2010 a young male moose was spotted swimming across the forebay area at Wuskwatim Falls. He was left undisturbed and exited into the wooded area on the north side of the forebay. Two wolverines were observed, one in the summer of 2010 which was swimming downstream of the project site towards Opegano Lake, and the other in November 2010, which passed through the contractor work area and exited into the forest. A wolf was also sighted in November near the camp security office. Otters were spotted on a regular basis on the south shore of the Burntwood River.

Education about the importance of not feeding wildlife in camp is an ongoing effort. Additional garbage receptacles were installed in an effort to reduce littering and deter wildlife.





Ethinesewin

Ethinesewin, the traditional knowledge and collective wisdom of Nisichawayasihk people, is an integral component of the monitoring of the Wuskwatim Generation Project. *Ethinesewin* shared by NCN Elders is vital to ensuring the project achieves *Kistethichekewin*, which means that the conduct of a person must be based on the sacred responsibility to treat all things with respect and honour, according to *Kihche’ohtasowewin* (the Great Law of the Creator).

The duty to apply and respect *Ethinesewin* is shown through documenting and incorporating Nisichawayasihk expertise and knowledge of the natural environment into project monitoring and assessment. During 2010–11, NCN Elders, youth and technical support staff continued to observe construction in and around the Wuskwatim Generating Station site. They monitored features of special significance to the Nisichawayasihk in the immediate area of the project site, along the access road, and on the waterways both upstream and downstream of Taskinigup and Wuskwatim Falls. Elders passed on their traditional knowledge and language to the younger members of the group.

In spring 2010, Cree names for each of the nine streams crossed by the Wuskwatim access road were written and a map prepared for continued sustainability. At some of the crossings, erosion and sediment control measures were seen to require some upgrading due to wear and tear of the seasons. Evidence of animal activity was observed in the borrow areas where rehabilitation work, including the planting of seedlings and spreading of woody debris, had occurred. Eventually it is expected that natural reforestation will occur. Medicinal plants were found upstream and downstream along the streams that are crossed by the access road; the new road has facilitated access to these areas.

At Wuskwatim Falls, where human remains had been found and an archaeological survey was underway, a traditional ceremony involving NCN Elders, NCN leadership, Manitoba Hydro personnel and contractors took place. Concern was expressed about the loss of the balsam fir stand at the channel improvement site adjacent to the falls.

A late summer / early fall environmental inspection focussed on Wuskwatim Lake. The group expressed the opinion that



the future stabilization of the water at a near-constant level should make travel on the lake safer and hopefully be beneficial to the overall rates of erosion. At bioengineering sites around the lake shore, rigorous manual work was being done by NCN Citizens, including flattening of the shoreline slopes, planting of native vegetation and application of wood chips for erosion suppression. Group members look forward to seeing the success of these works, which is giving back what is necessary to restore harmony in the land.

Wuskwatim Lake and vicinity is a rich resource area for medicinal plants. The Elders suggested that traditional medicines such as weegees and others be incorporated with the design of the bioengineering works. Future stable high water conditions resulting from the project are expected to flood some of the sources of such medicines, so new sources will need to be found or existing sources possibly transplanted to suitable sites.

Downstream of Taskinigup Falls at Kepuche Falls, the group left a traditional offering at a sacred Footprint site which is not often visited due to safety concerns and difficult navigation on the river. The site is one which will not be affected by the project; however, the group expressed the opinion that the site nevertheless should be protected for the future due to its heritage value to Nisichawayasihk Citizens.

In mid-February 2011, a group of Elders travelled by snow machine to examine historical grave sites located on an island in Wuskwatim Lake, where the surrounding water level will soon be stabilized near the high end of its recent range with the completion of construction of the Wuskwatim Generating Station. Those participating provided suggestions for long-term protection of such sites of historical significance, in particular a site which is planned as a respectful destination for reburials and artifacts found at risk at other sites around the lake. The group examined other areas around the lake where shoreline and erosion protection works are being undertaken as part of the project. They inspected ongoing engineering works to erosion-susceptible shorelines, and the development of offshore fish spawning shoals in part to replace fish habitat disrupted or lost as a result of the project.



Aquatic Effects Monitoring Program

Monitoring related to Wuskwatim construction was intensive in 2010. It included measuring the aquatic effects of removing and constructing cofferdams associated with the diversion of the Burntwood River from its natural channel to the spillway. Water quality monitoring was also carried out in conjunction with constructing the downstream boat launch, constructing a breakwater to protect the upstream boat launch on Wuskwatim Lake, and during the four effluent releases from the camp wastewater lagoon. The nine stream crossings along the Wuskwatim access road were also monitored for a fourth year.

Aside from water quality, aquatic monitoring in 2010 also included a survey of benthic invertebrates downstream of the project site and carrying out a major fish salvage.

Construction monitoring

Water quality monitoring took place at 13 locations beginning at Wuskwatim Lake and moving downstream to Split Lake. This was done before, during and after the removal of the upstream cofferdam and diversion of the Burntwood River through the newly constructed spillway. Water quality results obtained fell within the normal range measured prior to development and indicate the river was not measurably impacted by in-stream construction.

Water quality monitoring took place before, during and after installation of the roughed-in portion of the downstream boat launch and a portion of a breakwater intended to protect the upstream boat launch on Wuskwatim Lake. In the end, the breakwater was not completed, as the substrate on which it was built was too soft to support it. Construction of these works took place in late March and early April 2010. Turbidity measurements taken during construction showed there was no measurable effect on water quality.

Wastewater quality monitoring

The secondary cell of the camp wastewater lagoon was emptied four times between June 15 and October 31, 2010. Parameters in the final effluent were elevated on occasion, but all limits listed in Environment Act Licence No. 2699 were met. Water quality samples were collected in the backwater inlet into which the effluent flows, as

well as from the Burntwood River. Immediately downstream of the discharge site, levels of ammonia, nitrogen, phosphorus, suspended sediments, turbidity, pH, biological oxygen demand and chlorophyll were notably higher than at sites further downstream in the backwater inlet. No measurable effects were observed in the Burntwood River.

Water quality monitoring

Nine stream crossings, eight along the Wuskwatim access road and one through the camp, have been constructed. Turbidity and total suspended solids (TSS) were used to monitor aquatic ecosystem impacts in spring and summer 2010 to identify any ongoing effects on water quality after construction was complete. Water quality at eight out of nine crossings were within the Manitoba water quality objectives for the protection of aquatic life. Stream crossing six showed a high lab result for TSS, although the turbidity readings taken at the same time did not reflect this elevated value. An additional year of TSS monitoring will take place at stream crossing six to confirm the TSS value is within the Manitoba water quality objectives. Overall, the results indicate that the mitigation measures at the stream crossings are functioning properly to prevent suspended sediments from entering the streams at road crossings.

Benthic invertebrate monitoring

Benthic invertebrate sampling was conducted in early September 2010 after river diversion and major in-stream construction activities. Samples were collected on the Burntwood River and at reference locations on the Rat River and Threepoint Lake. Invertebrates found included aquatic worms, freshwater shrimp, fingernail clams, and a variety of insect larvae.

Fish salvage

A fish salvage took place in September and October 2010 in the impoundment area formed at the base of Taskinigup Falls after a cofferdam was installed near the end of the tailrace channel. Just over 2,500 fish, including 14 species, were captured and released downstream into similar habitat in the Burntwood River. The most common type of captured fish was longnose sucker.





Rock armouring on peninsula, southwest corner of Wuskwatim Lake

No Net Loss Plan

The No Net Loss Plan (NNLP) was developed to compensate for fish habitat that was affected by constructing various components of the generating station and other works required for the project (cofferdams, boat launches, water intakes, stream crossings, etc).

Construction of compensation works

Compensation was proposed in the NNLP to the Federal Department of Fisheries and Oceans (DFO) in 2004. Additional compensation was requested by DFO in 2010 and an addendum to the NNLP, including additional compensation, was provided to DFO in July 2010. The following provides a list of the works constructed in 2010–11.

Peninsula

Construction of the works proposed in the NNLP began in February 2010. The first work constructed was the largest, involving rock armouring around a large peninsula in the southwest portion of Wuskwatim Lake, near Wuskwatim Brook, to decrease the rate of erosion in the area and protect fish habitat. Work on the peninsula was completed in February 2010.

Reefs and boulder gardens

Locations along the southeastern shore of Wuskwatim Lake, south of Wuskwatim Falls, were selected for a field trial to create whitefish spawning reefs. Five reefs made up of gently sloping piles of rocks were constructed in February 2011 by leaving the rock on the surface of the ice and allowing it to fall into place once the ice melted.

In addition to the whitefish reefs, five boulder gardens were constructed along the shoreline of Wuskwatim Lake, immediately downstream from the water treatment plant intake groin. The features were constructed on the ice in February 2011, and consist of clusters of boulders and smaller rock to encourage fish use.

Tributary mouths

Another component of the NNLP is habitat enhancement at a few small stream mouths adversely affected by the Churchill River Diversion Project in the mid-

1970s. Potential locations were identified through consultation with NCN Elders and three locations were selected; one on Wapisu Lake and two on Threepoint Lake. An additional tributary mouth was selected on Wuskwatim Lake. Proposed habitat improvements to the four sites include debris removal, channel modifications such as rock or log placement, and the establishment of in-stream and shoreline vegetation to increase habitat diversity.

All debris was cleaned out of the tributary mouths between July and September 2010 in preparation for the habitat improvement work. In addition, rock armouring was conducted in February 2011 at the site on Wuskwatim Lake, to prevent erosion and better protect the tributary mouth from lake effects.

Soil bioengineering

Six sites were selected around Wuskwatim Lake to conduct experimental soil bioengineering work, which stabilizes the shoreline, and encourages fish use. Soil bioengineering uses plants and plant parts in various planting techniques to prevent erosion and improve habitat diversity for fish. Long-term monitoring will measure which planting techniques are the most successful.

Construction began in February 2010, when rock armouring was placed on the banks at three sites. NCN Citizens were hired to conduct grading and planting at two sites between August and October 2010. These two sites were completed in October 2010. Rock armouring was placed on the banks of the remaining sites in February 2011.

The remainder of the compensation works and soil bioengineering sites will be completed in 2011, with the exception that additional vegetation planting may take place in subsequent years at some of the sites.

Monitoring

Monitoring of the constructed compensation works and soil bioengineering sites will begin in 2011.



Soil bioengineering





Terrestrial Effects Monitoring Program

Mammal monitoring

Mammal monitoring was conducted during pre-construction (2004 to 2006) and during construction (2007 to 2009) along the access road, near the generating station and at an area near Harding Lake that is not affected by the project. Signs, including tracks and scat of woodland caribou, moose, black bear and gray wolf were recorded and comparisons were made between areas in close proximity to (zero to two kilometres) and further from (more than two kilometres) the road and generating station sites, and the control site at Harding Lake. Through comparison of pre-construction and construction results, the effect of project activities on large mammals has been determined.

The results show:

- Caribou activity near the access road decreased during construction. A greater decline in activity was observed near the generating station than along the access road.
- During construction, moose activity declined, but this was also the case at areas not affected by the project.
- Moose activity continued near construction areas (access road and project site) and in some cases it appears the animals were attracted to those areas.
- There was no clear change in activity level of black bears or gray wolves along the access road.
- There were no vehicle collisions reported for caribou, moose or black bear.
- There were two vehicle mortalities reported for gray wolf.

Generally, results were as predicted in the Environmental Impact Statement, except moose did not avoid active construction zones and the wolf mortality associated with project traffic was not predicted. Monitoring effects on mammals will continue during project operation.

Wapisi Caribou Committee

The Wapisi Caribou Committee (WCC) is a multi-stakeholder group comprising representatives from Nisichawayasihk Cree Nation, Manitoba Conservation, Manitoba Hydro and Wildlife Resource Consulting Services MB Inc. The WCC was established in 2007 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 project. This year, the WCC has continued to work actively on educational initiatives to help inform people about the threatened status of the Wapisi herd. Copies of “Woodland Caribou: Conserving the Herd” (the video produced in 2010 by the WCC) were distributed to the high school in Nelson House. The video was also viewed at the annual project monitoring open house in January 2011.

The WCC met with an environmental education specialist regarding the possible development of a teaching unit and interpretive kit. These items could be used in conjunction with the video mentioned above to assist in awareness about woodland caribou. Once interest in these products has been gauged, their development will begin.





Aquatic mammal monitoring

A one-day aerial survey of beaver took place in September 2010 to collect baseline data. The area assessed included Wuskwatim, Cranberry and Opegano lakes, Burntwood River and a control area at Bison Lake. A total of 304 beaver lodges, 142 dams and 111 food caches were observed.

A ground survey of beaver was performed from September 24 to October 2, 2010 to collect a second year of baseline data on lodge and food characteristics in the Wuskwatim Study Area. Approximately 115 lodges were monitored in the immediate area of the station, Wuskwatim and Opegano Lakes and the Burntwood River area. About 43 lodges were found in the Bison Lake area. Construction of the project is expected to change aquatic mammal behaviour along the Burntwood River, however, due to the extensive availability of habitat in the area these changes are not expected to alter populations significantly. Baseline monitoring will continue in 2011.

Beaver and mink were trapped in the immediate area of the station, including Wuskwatim Lake, to collect baseline data on mercury levels in the muscle and livers of aquatic furbearers. Mercury levels are not expected to change in these animals as a result of the project. Baseline monitoring will continue in 2011.

Shoreline wetland habitat composition

Shoreline wetland monitoring studies began in June 2010. Permanent monitoring transects were set up in areas that could be affected by the operation of the Wuskwatim Generating Station. In total, 139 permanent sites were established, 119 upstream and 20 downstream of the generating station in the Burntwood River.

Detailed habitat information was gathered along two transects at each site. Each transect started in the upland forest and ended at the end of the emergent vegetation in the water. Plant and substrate surveys were conducted, which included soil condition characterization.

During this study 160 plant species were recorded, including two species that are not commonly found in the area, dwarf bilberry and water marigold.



Shoreline wetland conditions were mapped in 2010 with the assistance of aerial photography. The shoreline wetland map will be combined with the permanent shoreline wetland monitoring transects to examine how operation of the generating station is changing shoreline wetland habitats over time.

Shoreline invasive plants

Shoreline invasive plant monitoring began in July 2010. The type and extent of invasive species currently occurring along the shoreline were recorded. Information from the shoreline wetland habitat maps will be used to observe the locations and amounts of invasive plants and how they change over time.

Shoreline invasive plant transects were surveyed at nearly 50 kilometres upstream and 15 kilometres downstream of the generating station. Using a boat to survey the shoreline, a botanist recorded the type and location of any invasive or non-native plants.

Invasive plant species recorded in 2010 were reed-canary-grass (51 locations, both up and downstream of the generating station), perennial sow thistle and scentless chamomile (5 locations each, all downstream of the generating station). Baseline monitoring will continue prior to the start of station operations.

White spruce and balsam fir regeneration

White spruce (*Wapiskimnahtik*) and balsam fir (*Napakasiht*) are two culturally and ecologically important tree species that grow in the project area. Clearing to construct the Wuskwatim Generating Station removed some white spruce and balsam fir known to occur in the area. Wuskwatim Power Limited Partnership agreed to regenerate 120 hectares of white spruce and balsam fir forest.

A study was conducted in 2006 and again in 2009 to gather information about the local conditions that lead to successful white spruce and balsam fir regeneration. Efforts to regenerate balsam fir address concerns raised by the Nisichawayasihk Cree Nation regarding the loss of these culturally significant trees in the project area. White spruce and balsam fir regeneration will occur over the next few years and will be monitored to evaluate success.



Burntwood River, looking downstream from the generating station site

Sediment Management Plan

Major in-stream work took place in 2010 and consisted of installing and removing cofferdams throughout July, August and September 2010, removal of rock from the downstream end of the spillway channel in July, and diversion of the Burntwood River through the spillway beginning on July 31, 2010.

The monitoring of total suspended solids (TSS) during in-stream work is a federal regulatory requirement for construction of the project. The Wuskwatim Environmental Impact Statement indicates that TSS levels up to 25 mg/L above background conditions in the fully mixed portion of the Burntwood River, which occurs at the inlet to Opegano Lake, are not expected to cause change to aquatic life in the river.

Instantaneous analysis of TSS is not possible. Therefore, a numerical correlation between turbidity and TSS was developed for the Wuskwatim environment, which allowed the use of real-time turbidity measurements to estimate TSS. Turbidity loggers were placed directly upstream and downstream of the construction site and at the inlet to Opegano Lake. These loggers transmit readings to the construction site every five minutes, enabling assessment of the data in real-time. TSS levels immediately downstream of the station provided an initial indication of whether construction activities were affecting TSS. This allowed site personnel to take action to prevent levels from exceeding the regulatory limit at Opegano Lake and other locations. All monitoring results during in-stream construction were sent to the Department of Fisheries and Oceans Canada for review on a daily basis.

River diversion

Diversion through the spillway took place starting on July 31, 2010. The three spillway gates were opened and closed gradually over a period of three days to prevent surplus sediment from channel construction from washing downstream and exceeding the TSS regulatory limit. Whenever preliminary targets were exceeded immediately downstream from the station, the gates were closed for a period of time until TSS levels dropped off and then the gates were reopened. This allowed a slow and steady flushing of sediment out of the spillway channel in a way such that the TSS level at Opegano Lake always met the regulatory limit, and therefore protected aquatic life.

Stage II downstream cofferdam

On August 22, 2010, TSS results began to regularly show increases above the preliminary target levels immediately downstream from construction activities. Site personnel began to look for the source of the excess sediment and noted some erosion on the north bank of the river. It was believed that changes in the current after river diversion were causing the erosion, so rock armouring was placed on the eroding bank on August 24.

The TSS results immediately downstream continued to be erratic after rock armouring placement. The elevated results were observed on and off into September, but no other areas of erosion were observed by site personnel. At the same time as the TSS levels were elevated, the Stage II downstream cofferdam was being constructed and currents in the river were making it difficult for the contractor to make it water-tight. On September 19, construction stopped on the cofferdam to allow the engineers and contractors to review approaches to seal the cofferdam. After this, TSS levels dropped off and remained below the preliminary targets from then on.

Other than what happened during these two activities, TSS levels remained constant throughout construction from July 31 to October 26. Of greater importance, TSS levels measured at the inlet to Opegano Lake did not exceed 25 mg/L above background at any time during 2010.





Heritage Resource Protection Plan

Archaeological monitoring was conducted at six locations at the project site in 2010. Areas examined included the quarry southwest of Wuskwatim Lake (pre- and post-impact), identification and recovery of a burial (assisted to the provincial Historic Resources Branch) on the north side of Wuskwatim Falls, the Burntwood River southern shoreline between Wuskwatim and Taskinigup Falls, south side of Wuskwatim Falls and the dewatered area below Taskinigup Falls which will be the generating station tailrace once the station is operational.

Following an archaeological survey in February 2010, a rock outcrop one kilometre inland from the southwest shore of Wuskwatim Lake, near Wuskwatim Brook, was used as a quarry. Assessment prior to blasting was via pedestrian survey and post blasting via shovel testing in June 2010. No heritage resources were noted during either investigation, although *Ethinesewin* had previously disclosed that it was expected there were burial sites within the area.

Pre-European contact burials were unearthed in May 2010 at Wuskwatim Lake. The project archaeologist and Nisichawayasihk Cree Nation (NCN) archaeologist arrived on-site to assist the Historic Resources Branch in recovery. Additional fieldwork in this area was requested by NCN and Manitoba Hydro in response to the burial disturbance.

Post-impact monitoring and intensive test excavations at two previously identified heritage sites were conducted in June and August 2010. Test excavation locations were mapped and 96 shovel tests were conducted where 40 concentrations of artifacts were surface collected. A total of 451 artifacts were collected including

Pre-European contact lithic tools (bifaces and scrapers), debitage lithic flakes; historic glass trade beads and hand carved soapstone pipe bowl fragments.

A second test excavation was conducted on the south bank of the Burntwood River at a previously identified archaeological site. Test excavation locations were mapped and 46 shovel tests were conducted, recovering 85 artifacts; most of which were surface finds from the slumped shoreline. Lithic tools and debitage flakes as well as faunal remains represented the majority of the artifacts found. Few artifacts were recovered in conjunction with the shovel testing conducted along transects that were established across the elevated area.

In 2010, the second phase of river diversion was completed, resulting in the dewatering of the main channel of Taskinigup Falls and the area immediately downstream with diversion of flow through the newly constructed spillway of the generating station. The dewatered southern section of Taskinigup Falls was surveyed for heritage resources in August and again after the downstream cofferdam was completed in September. No archaeological resources were recovered in the 2010 survey.



Sample of artifacts recovered in the Wuskwatim area.



Physical Environment Monitoring Program

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.

Climate, water regime and reservoir greenhouse gas monitoring

To characterize the climate of the Wuskwatim monitoring area, weather was monitored at five weather stations within the region. Total precipitation during the reporting period (April 2010 to March 2011) was above the climate normal (1970–2000) at the Environment Canada weather station in Thompson. At this station, total precipitation in June 2010 was the lowest on record while total precipitation in August was the highest on record, more than three times the climate average for that month.

Flow in the Burntwood River was reduced from high flows in the spring to below average during much of the summer. The river flow increased sharply from mid-August through September, rising to the higher winter flow condition. Water levels on Wuskwatim Lake varied in response to the flow from the Notigi control structure, dropping about one metre by mid-August and then increasing about one metre by the end of October 2010. There was no change in water level on Wuskwatim Lake or downstream of the project area as a result of in-stream construction activities.

Pre-impoundment greenhouse gas monitoring continued in the project area in 2010. These studies are designed to measure pre-impoundment conditions in the vicinity of the project area. Continuous monitoring of carbon dioxide, methane and oxygen took place from June through October between Wuskwatim and Taskinigup Falls. In addition to continuous monitoring, discrete measurements of carbon dioxide, methane and nitrous oxide were recorded on Wuskwatim Lake as well as upstream and downstream of Taskinigup Falls.

Physiography

Stage I cofferdams were removed, including the rock plug that closed off the downstream end of the spillway, so that flow could be passed through the spillway channel. Upstream and downstream cofferdams were constructed across the previously open portion of the river. Approximately 17 hectares of vegetation were cleared on the south shore and where roughly 87,000 cubic metres of material (rock, granular and impervious) were used in the construction of the Stage II cofferdams.

Sediment transport

Several times during summer 2010, discrete sediment transport data was collected at 16 locations upstream and downstream of the project, including bed-load sampling at nine locations. Total suspended solids (TSS), turbidity and sediment grain size data were collected at each site. TSS concentrations observed in 2010 fell within the range previously observed in the monitoring area during periods with and without in-stream construction. Similarly, the monitoring results for turbidity and sediment grain size were consistent with past observations within the monitoring area.

Continuous turbidity monitoring took place at four locations, two upstream and two downstream of the project. Turbidity at Opegano Lake, approximately 10 kilometres downstream of the project, increased for a period of about a day when the spillway gates were opened for the first time. The turbidity increase was minimal due to the systematic gate opening sequence. Other in-stream work, including placement of rock to construct the downstream cofferdam across the Burntwood River, did not cause a noticeable change in downstream turbidity. Overall, turbidity and TSS monitoring results were within the ranges observed in previous years.

Woody debris

Data collected through Manitoba Hydro's Waterways Management Program includes types and quantities of debris removed upstream and downstream of the project prior to Wuskwatim reservoir impoundment. This information may be used to determine a change in the debris environment as a result of operating the Wuskwatim Generating Station.

Socio-economic Monitoring

Economic monitoring

The Wuskwatim Generation Project influences the economy of Manitoba in many ways. This includes providing employment (creating labour income) and purchasing the goods and services required to build 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 continues 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 re-spending of direct and indirect income generated by the project, increasing sales for consumer goods 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 project from the start of construction to March 2011. A second survey on indirect effects on businesses in Thompson and Nelson House was conducted in 2010. Results from that survey are summarized in this report. While data is not available to calculate GDP specifically for the project, the economic impacts provide a positive contribution to 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 2011 include:

Person-years of direct employment	2,320
Direct project purchases (\$ Millions)	\$789.0
Direct labour income (\$ Millions)	\$172.0
Direct federal & provincial taxes (\$ Millions)	\$101.9

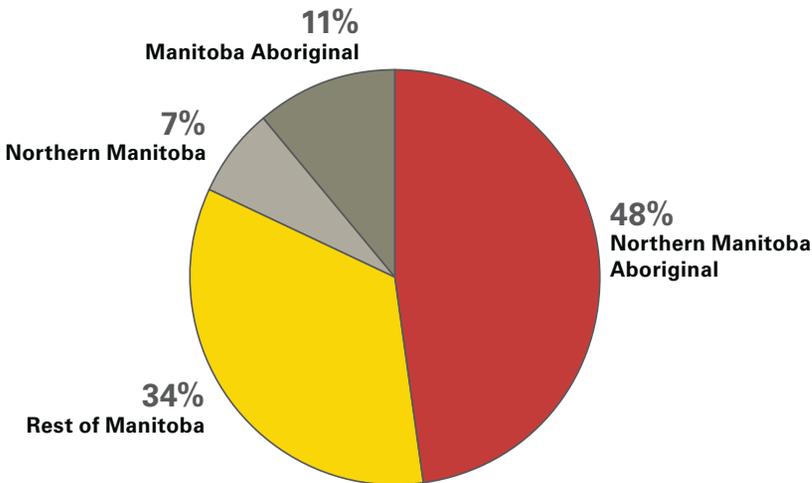
Employment

Employment can be measured in different ways, including hires and person-years. Hires refers to the number of people hired for any duration at the project site. One individual may be hired more than once (for example, for different contracts) and each hire is recorded separately. However, when part-time and/or seasonal workers are used, or when there is turnover at the work site, it is useful to standardize the hires in terms of person-years of employment. A person-year of employment is defined as one full-time job for one year. This typically represents about 2,000 hours of work. Information on both hires and person-years is provided in this report.

Person-years of employment

From the start of construction to March 31, 2011, direct employment created on the project amounted to 2,320 person-years. Of this, 69 per cent, or 1,602 person-years represent Manitoba employment. Total northern Manitoba and northern Manitoba Aboriginal employment represents approximately 55 per cent (886 person-years) and 48 per cent (778 person-years), respectively, of Manitoba employment.

Person-years of employment – breakdown of Manitobans



Hires on the project

From the start of construction to March 31, 2011, there were 5,108 hires on the work site, including Aboriginal hires. Of the total hires, 3,316 or approximately 65 per cent were Manitobans. Total northern Manitoba and northern Manitoba Aboriginal hires represent approximately 53 per cent (1,768 hires) and 46 per cent (1,517 hires), respectively, of Manitoba hires. There were a total of 1,990 Aboriginal hires including 1,479 Status, 460 Métis, and 51 other (Inuit and non-Status). There were a total of 545 Nisichawayasihk Cree Nation (NCN) hires on the project. Included in the total NCN hires are 21 apprentices including carpenters, electricians, millwrights, painters, pipefitters and plumbers.

	Total Hires	Aboriginal	Non-Aboriginal
Labourer	706	393	313
Security Guard	88	66	22
Operating Engineers (Crane & Equipment)	605	277	328
Teamster	301	213	88
Carpenter & Millwright	923	120	803
Painter	20	7	13
Glass Worker	5	0	5
Floor Coverer	8	0	8
Insulator	12	0	12
Lather	16	9	7
Plasterer & Cement Mason	77	6	71
Sheet Metal Worker	13	3	10
Roofer	16	6	10
Sheeter, Decker & Cladder	23	6	17
Bricklayer	14	0	14
Boilermaker	26	4	22
Ironworker & Rodmen	375	117	258
Electrician	180	45	135
Pipefitter & Plumber	126	32	94
Office Worker	226	69	157
Elevator Worker	2	0	2
Caterer	542	511	31
Other*	804	106	698
Total Hires	5,108	1,990	3,118
Total Person-Years	2,320	949	1,371

* 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

From project inception to March 31, 2011, there have been 1,476 occurrences where employees were discharged or resigned. This represents a rate of turnover of 29 per cent of total hires. Of the 1,476 occurrences where employees were discharged or resigned, 772 reported being of Aboriginal descent. This represents a 39 per cent rate of turnover among Aboriginal hires¹. The majority of turnover (71 per cent) on the job site comprised resignations as opposed to discharges. A resignation represents an individual choosing to leave a job and does not include layoffs.

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, 2011 this has occurred 227 times — approximately 15.4 per cent of total resignations and discharges. Of these returns to the work site, approximately 149 reported to be of Aboriginal descent, representing about 19.3 per cent of all Aboriginal resignations and discharges.

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 the Wuskwatim and the proposed Keeyask projects, was offered through the Wuskwatim and Keeyask Training Consortium (WKTC). Funded by Manitoba Hydro, and the provincial and federal governments, WKTC facilitated the Hydro Northern Training and Employment Initiative (HNTEI) and provided project-based funding to five Cree Nations and two Aboriginal organizations, who in turn offered training to their Citizens.

The training portion of HNTEI came to an end on March 31, 2010 and final data related to the initiative will be incorporated into the WKTC final annual report. As of March 31, 2011, 179 pre-project trainees, including 103 NCN Citizens, had found work at the Wuskwatim project site.

Purchasing

To the end of March 31, 2011, a total of \$789 million was spent on goods and services for the project. Of this, \$219.6 million were Manitoba purchases. Total northern Manitoba (Aboriginal and non-Aboriginal) purchases represent \$148.3 million or 68 per cent of total Manitoba purchases. Total northern Manitoba Aboriginal purchases represent \$143.6 million or 65 per cent of total Manitoba purchases. Another \$3.4 million was spent on other purchases where there is no definitive way to confirm whether the vendor is a northern, Aboriginal, Manitoba or non-Manitoba business.

¹ Turnover is calculated as the total incidences of discharges 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.

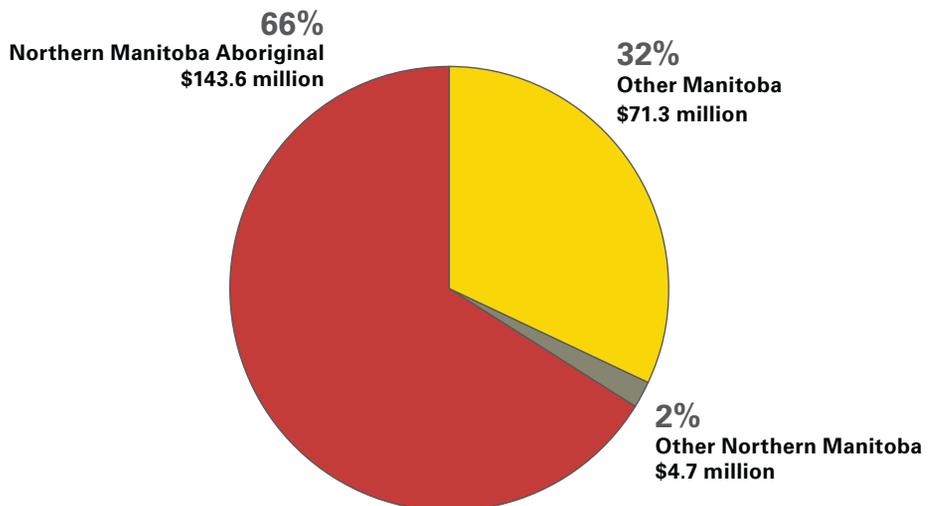


The table below summarizes total purchases to date while the accompanying pie chart provides a further breakdown of the Manitoba purchases.

The information provided represents direct purchases of the project from contractors. Secondary purchases by contractors, in turn, would include purchases of goods and services from Manitoba based businesses.

Purchases to end of March 2011	\$ Millions	% of Total
Manitoba	\$219.6	29%
Outside of Manitoba	\$566.0	70%
Other	\$3.4	1%
Total	\$789.0	100%

Breakdown of Manitoba purchases

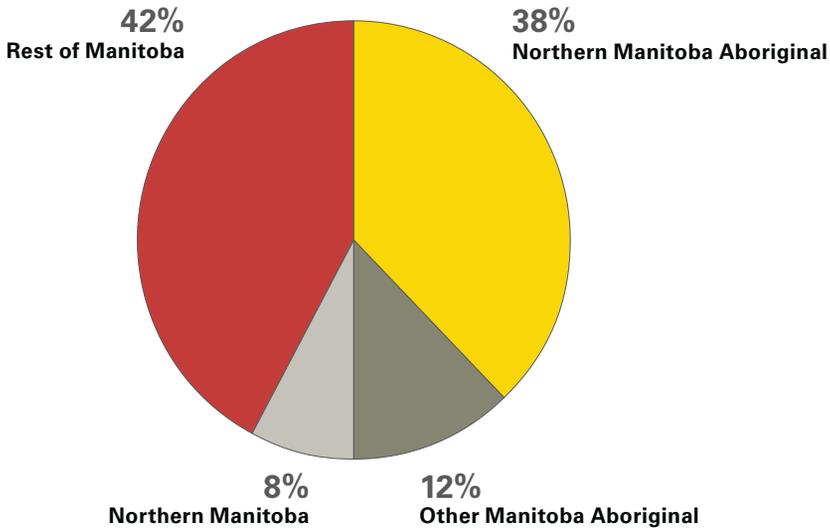


Labour income

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 project to the end of March 31, 2011 is approximately \$172 million². Nearly 62 per cent or \$106.6 million represents labour income associated with direct Manitoba employment.

Total northern Manitoba and northern Manitoba Aboriginal direct labour income represent approximately 46 per cent (\$48.3 million) and 38 per cent (\$40.3 million), respectively, of the total Manitoba direct labour income. The chart below provides a breakdown of the estimated labour income in Manitoba.

Manitoba labour income breakdown



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 local or municipal governments or taxes associated with indirect or induced employment.

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



The estimate of tax impacts to the end of March 2011 is \$101.9 million and includes \$3.7 million in payroll taxes³, \$48.7 million in personal income taxes⁴, \$14.9 million in capital tax, \$2.2 million in fuel tax⁵ and \$32.4 million in provincial retail sales tax⁶.

Indirect and induced economic impacts

The Wuskwatim Socio-economic Effects Monitoring Plan required a survey of indirect and induced impacts on businesses be conducted twice during construction — to reflect the infrastructure (road and camps) activity and to coincide with peak construction activity. The first survey to reflect infrastructure activity was conducted in early 2008 and the results of that survey were summarized in the 2007–08 Monitoring Overview. The second survey was conducted in 2010 and reflects the peak of activity during the general civil work. Results of this second survey are summarized below.

Indirect effects arise from project related purchases by Wuskwatim Power Limited Partnership (WPLP) and its contractors while induced effects arise from the spending of income earned by workers employed by the project (and their families). Similar to the first survey, businesses in Thompson (the nearest industrial and commercial centre to the project) and Nelson House (closest community to the project) were surveyed to assess the indirect and induced employment and business opportunities generated by the project during 2009, the period reflecting peak general civil work activity. Specific components of the work were undertaken with Aski'otutoskeo Ltd., NCN's monitoring company, with support provided by NCN's Implementation Office staff.

³ Health and Post-secondary Education Tax is calculated as 2.15 per cent of the estimated labour income of \$172 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 4.0 cents/litre for diesel fuel and 10.0 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.

The information gathered included:

- purchase expenditure data for 2009 from Manitoba Hydro (reflecting WPLP direct expenditures) and primary contractors for purchases from Thompson and Nelson House businesses
- in-person interviews with a cross-section of individual businesses in Thompson and Nelson House

The main contractors spent \$14.5 million and \$2.5 million at Thompson and Nelson House businesses, respectively. These expenditures occurred in the following sectors: retail / wholesale goods and services (34%), other (31%), construction (15%), transportation (14%), accommodation and food services (4%), and specialty services (2%).

Twenty businesses in Thompson participated in the survey. It was generally viewed that project construction has had an overall positive impact on the Thompson business community. It was noted that with the completion of the main camp and its range of services, there is less need for workers to come into Thompson for goods and services. Therefore, this has resulted in less impact on wage rates, employee turnover rates and availability of workers to fill jobs. With regards to employment, it appears that jobs created previously (as identified in the 2007 survey) were maintained and that a total (net) of two new permanent full-time jobs had been created as a result of the project since the first survey was undertaken.

Four businesses in Nelson House were surveyed. Three out of four businesses surveyed noted that effects of the project had been positive due to increased revenue and resulting business enhancements, and improved credibility of NCN as a viable, capable and progressive business entity. One business was unable to distinguish between the project and other effects. None of the businesses surveyed increased their employment levels due to 2009 project related expenditures and employee turnover was not identified as a major concern.





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 established 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. NCN is responsible for providing cultural and retention support programming on-site under contract with WPLP.

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 cultural awareness workshops delivered by qualified NCN Citizens.

Over the past fiscal year, 12 cultural awareness workshops were held with contractor employees and one full-day cross-cultural awareness session was held with senior management, providing training for 214 individuals.

From April 2010 to March 2011 training sessions were monthly. Workshops continue to be delivered each month recognizing that most workers on-site this year may have already received training.

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 are available all year and informational brochures are made available to publicize the service.

Cultural 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 Citizens. To the end of March 2011, 28 ceremonies had been held, including eight sweat lodge ceremonies and two pipe ceremonies. This included a special ceremony held at the Wuskwatim Cultural Centre on July 22, 2010 to mark the closing off of Taskiningup Falls on the Burntwood River. This ceremony was organized by the cultural coordinator for the Wuskwatim Project, and included a pipe ceremony, songs, sweat lodge and tobacco offerings at the river's edge. Guests included NCN Elders, Chief and Council as well as Manitoba Hydro representatives.

Community of Nelson House

Population

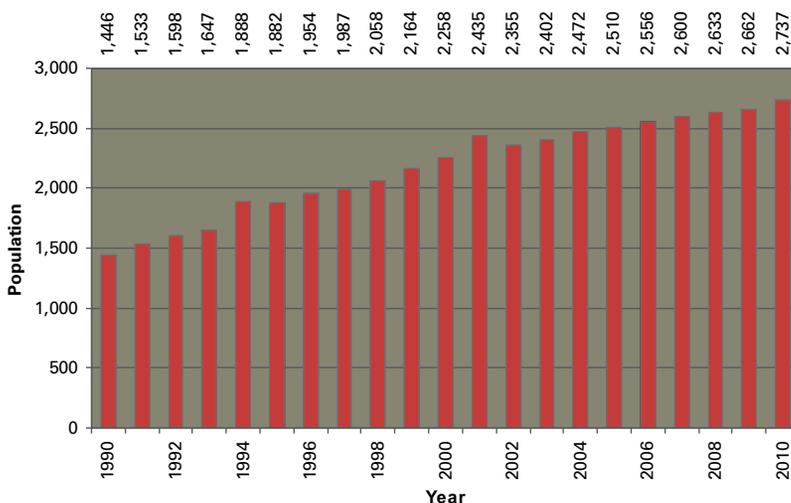
The Wuskwatim Generation Project Environmental Impact Assessment predicted a moderate amount of immigration and emigration at Nelson House associated with construction of the project. The possibility of immigration is associated with the lure of well-paying construction jobs as well as community-based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



Data from Indian and Northern Affairs Canada suggests that the population at Nelson House has continued to remain stable since the start of construction on Wuskwatim. As shown below, the total population at Nelson House increased from 2,662 to 2,737, an increase of 75 people, between the 2009–10 and 2010–11 reporting periods. Since the start of construction, the population has increased from 2,510 at the end of 2005 to 2,737 at the end of 2010, an increase of 227 people.

This represents an average annual growth rate of 1.8 per cent. This compares to an average annual growth rate of 2.4 per cent in the Nelson House population from 2000 to 2004.

NCN on-reserve Population (1990 – 2010)



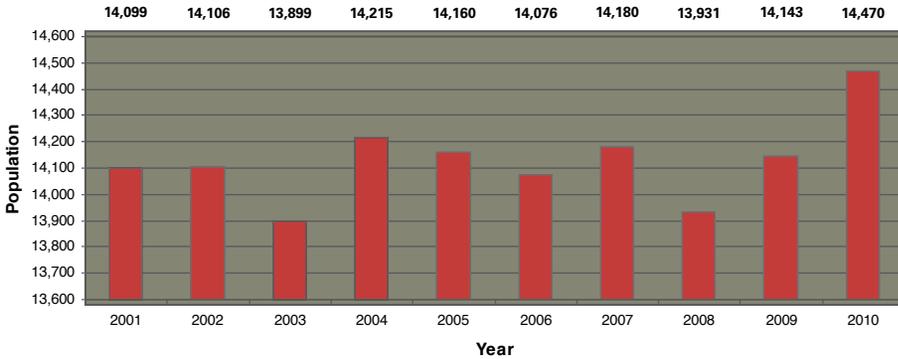
Source: INAC’s Indian Registry System as of December 31 of each year

City of Thompson

Population

Thompson is the nearest industrial and commercial centre to the project and is potentially a 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 immigration and off-hour worker visits to Thompson, including the construction of a camp at site outfitted with various recreational facilities for workers. While the annual data from Manitoba Health Annual Health Statistics show a slight increase (of 327 people) from the previous reporting period, the overall Thompson population has not increased significantly during the construction of Wuskwatim (a cumulative total of 394 persons since the start of construction).

Thompson Population (2001 – 2010)



Source: Manitoba Health Annual Health Statistics

NCN impact management process

Manitoba Hydro and NCN continue to work together to monitor project impacts on NCN Citizens. An evaluation of training and employment related to the generation project is being considered for the upcoming year.



Transportation monitoring

Traffic safety — Wuskwatim access road

The access road connects Provincial Road 391 to the 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, 151 vehicles per day used the road from April 2010 to March 2011. This is an increase of six vehicles per day on average compared to the previous year and reflects the peak in construction activity that continued during this reporting period. There were 18 minor motor vehicle accidents along the access road during this reporting period, largely due to weather conditions and an increase in vehicle traffic.

	2010									2011			Total
	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	
Total	5968	5817	5683	5679	5279	5291	4791	4238	2513	3351	3179	3176	54965
Daily Average	199	188	189	183	170	176	155	141	81	108	114	102	151

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 begun to implement safety measures to mitigate potential effects associated with this new access and to assist resource users in reaching their traplines safely. There are currently two winter trails in operation around the Wuskwatim site. These trails were established and continue to be maintained as a result of the project. NCN Citizens were hired to construct safe haven cabins along these trails for use by resource users such as hunters, fishers, and berry pickers.

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 in place during the 2010 open water season.

During the 2010 open water season, a crew of three NCN Citizens was hired through Manitoba Hydro's Waterways Management Program to patrol Wuskwatim Lake. These boat patrols were deployed to gather data on debris type and quantity. Crews travelled 4,520 kilometres during the open water season, and some shorelines were travelled more than once. Material removed included both small and large pieces of debris. Of the material removed, 98% was old and 2% was new. Debris removal activities work towards addressing NCN's concern about debris along shorelines on Wuskwatim Lake. Work will continue in the open water season of 2011.

There have been no safety incidents reported over the last year on Wuskwatim Lake or downstream on the Burntwood River in the project area.





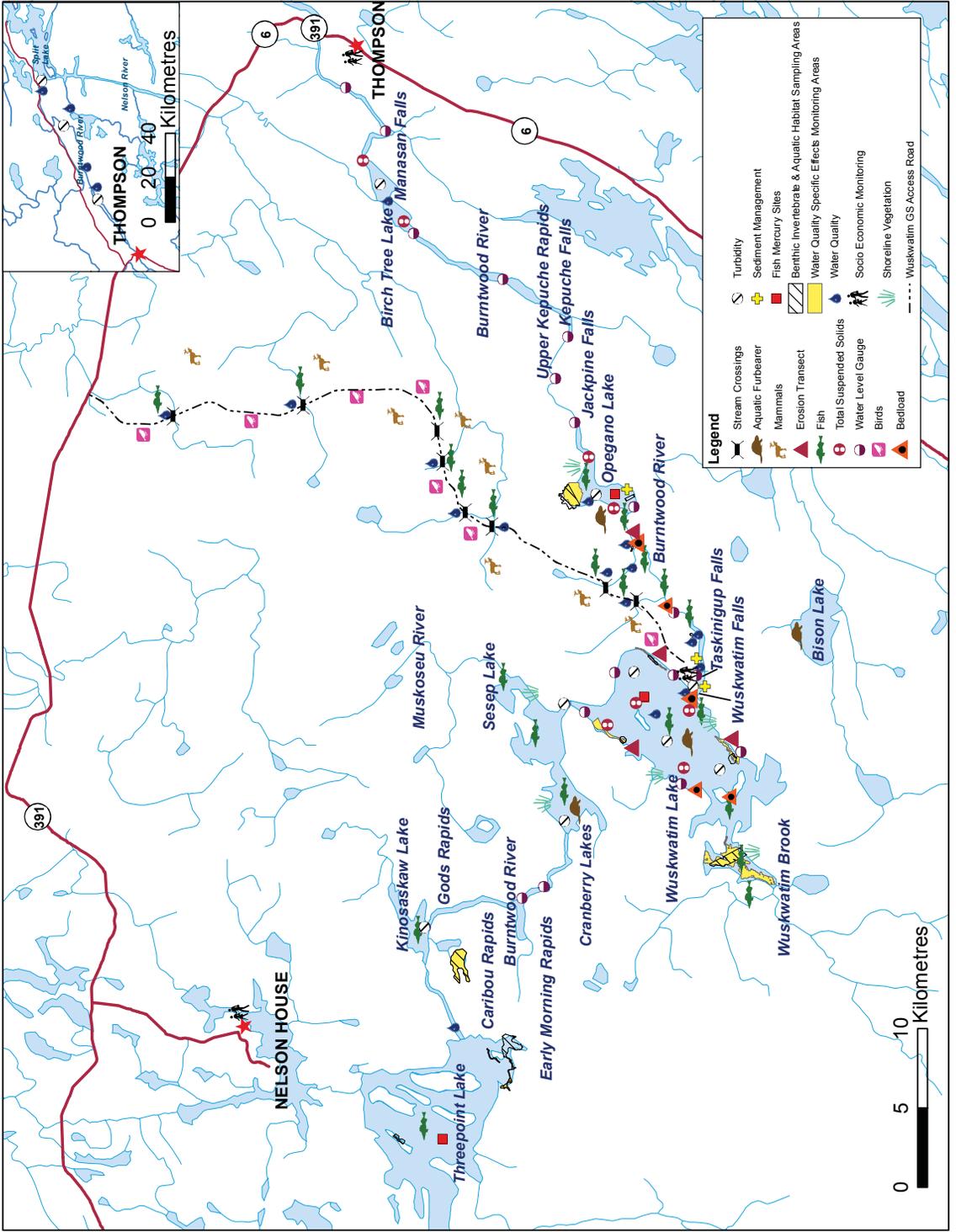
Public Communication

Wuskwatim Power Limited Partnership (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 Nisichawayasihk Cree Nation (NCN) Citizens living both on and off reserve and to various other stakeholders. The document is also available at the Wuskwatim Implementation Office in Nelson House, in the Public Registry and on the WPLP website at www.wuskwatim.ca. A summary of this document is translated verbally to Cree, recorded on compact disc and made available for NCN Citizens.
- Annually schedules a Wuskwatim Monitoring Advisory Committee (MAC) open house in Nelson House to provide the community with up-to-date information on monitoring programs and to answer any related questions. This past year, WPLP's Wuskwatim MAC held its open house on January 19, 2011 at the Atoskiwin Training and Employment Centre.



WUSKWATIM MONITORING





River Closure Ceremony – July 22, 2010



WUSKWATIM
Power Limited Partnership

