



YEAR IN
REVIEW

For the year ending March 31, 2019



WUSKWATIM

Power Limited Partnership

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Directors of the General Partner of WPLP

Left to right (seated): Marcel Moody (Nisichawayasihk Cree Nation), Jimmy Hunter-Spence (Nisichawayasihk Cree Nation)
 Left to right (standing): Brenda Froese (Manitoba Hydro), Lorne Midford, Chair (Manitoba Hydro), Nancy Willms (Manitoba Hydro), Wesley Penner (Manitoba Hydro)



WUSKWATIM
 Power Limited Partnership

Wuskwatim Power Limited Partnership (WPLP), a legal entity involving Manitoba Hydro and Nisichawayasihk Cree Nation through its wholly owned Taskinigahp Power Corporation (TPC), has developed the Wuskwatim Generating Station on the Burntwood River in northern Manitoba. It marked the first time in Manitoba and Canada that a First Nation and an electric utility have entered into a formal equity partnership to develop and operate a hydroelectric project. Manitoba Hydro provides management and operational services to WPLP in accordance with the Project Development Agreement (PDA).



INTRODUCTION AND BACKGROUND

Nisichawayasihk Cree Nation and Manitoba Hydro spent nearly a decade discussing, planning and undertaking the environmental studies and regulatory processes for the 200-megawatt Wuskwatim Generation Project operating in Nisichawayasihk Cree Nation's traditional territory on the Burntwood River downstream of Wuskwatim Lake at Taskinigup Falls.

In 2006, the Wuskwatim Project Development Agreement (PDA) that governs all aspects of the Project was approved by Nisichawayasihk Cree Nation Citizens and signed by senior Manitoba Hydro officials and Nisichawayasihk Cree Nation Chief and Council. Construction started in August that year.

The agreement provided the option for Nisichawayasihk Cree Nation to own up to one-third of the Wuskwatim Generating Station through its wholly owned Taskinigahp Power Corporation. Nisichawayasihk Cree Nation has confirmed its intent to maintain its 33 per cent ownership position in the Wuskwatim Project.

The Wuskwatim Power Limited Partnership (WPLP) is governed by the Board of Directors of its General Partner (5022649 Manitoba Ltd., a wholly owned Manitoba Hydro subsidiary). The Board consists of two Nisichawayasihk Cree Nation and four Manitoba Hydro representatives. Pursuant to the PDA, WPLP contracted Manitoba Hydro to construct, manage, operate and maintain the Wuskwatim Generating Station.

Manitoba has a large self-renewing supply of waterpower with many hydroelectric generating stations developed to provide electrical energy for its citizens. Wuskwatim became fully operational in October 2012 and produces clean, renewable hydroelectric power. It adds to Manitoba's generation assets, helps to meet the province's domestic needs and provides energy to export customers.

MESSAGE FROM THE CHAIR



Lorne Midford
Chair, Wuskwatim Power Limited Partnership

I am pleased to introduce the 2018–2019 Year in Review which summarizes the activities and achievements of the Wuskwatim Power Limited Partnership (WPLP) over the past year. As you will read later on in this review, the generating station continues to perform well according to all relevant metrics. The service agreement entered into with Nisichawayasihk Construction Limited Partners, who were contracted to undertake work on the Wuskwatim roads, and the unblemished safety record at the plant are good examples of our success.

Environmental monitoring remains a cornerstone of the Project. The importance of the environment to the Partnership and our commitment to its protection is demonstrated by the length of the Environmental Monitoring section, which annually makes up the bulk of the Year in Review. Since the start of the Project, a vigorous and comprehensive environmental monitoring program has been in place to ensure that we fully understand the impacts of our operations.

These efforts have included the important work undertaken through *Ethinesewin* monitoring, which uses traditional knowledge to observe any environmental change and is an integral part of our environmental monitoring program. This past year, a number of activities were undertaken by the Nisichawayasihk Elders *Ethinesewin* Monitoring Tour. The information they gathered and the insights and recommendations they generated play an important role in ensuring the overall environmental health of our operations.

From a financial perspective, the WPLP reported a net loss for 2018–2019 of \$9 million. This compares favourably to the net losses in previous years of \$25 million in 2017–2018 and \$36 million in 2016–2017 and is consistent with the losses experienced by hydroelectric generating stations in the early years of operations due to the high up-front carrying costs associated with significant initial capital investment.

In closing, I would like to express my appreciation for the contribution of each Board member and the collaboration and spirit of cooperation which exists at the Board. Their efforts have allowed us to make good decisions and to ensure the smooth operation of the WPLP. This bodes well for continued future successes and the achievement of our mutual objectives.

Tansi

Lorne Midford

A handwritten signature in black ink that reads "Lorne M. Midford". The signature is written in a cursive, flowing style.

Chair of the General Partner of
Wuskwatim Power Limited Partnership
(5022649 Manitoba Ltd.)

OPERATIONS

STATION PERFORMANCE

Manitoba Hydro uses three main criteria to measure generating station performance: net generation output, unit availability and unit forced outage rate.

Net Generation Output

Wuskwatim Generating Station produced 1.6 million megawatt hours of electricity this year. Output at the generating station was as forecast and reflects normal flows. Monthly production averaged 134,073 megawatt hours, with peak production of 148,251 megawatt hours in July and a low of 114,544 megawatt hours in November. These production numbers are a result of the near-normal water supply available in the Burntwood and Churchill River watersheds.

Unit Availability Factor

The generating station demonstrated an average monthly unit availability factor of 95.9 per cent, a measure of when the station is available to run when required. This is above average for a hydraulic generating station of this kind.

Unit Forced Outage Rate

The generating station demonstrated a forced outage rate of 1.6 per cent, a measure of the frequency of electrical or mechanical problems that remove a unit from service. The total of 422 hours of unit forced outage time is 1.6 per cent which is slightly greater than the 1 per cent target.

MAINTENANCE AND REPAIRS

In May 2018, six-year maintenance occurred for 15 days on Unit 1.

Bottom ring leakage repairs took place for ten days in October on Unit 3.

In November, servomotor repairs took place over 17 days on Unit 1.

In December, servomotor and hot bus connections repairs took place for four days on Unit 3.

DIRECT CONTRACT OPPORTUNITIES

A service agreement is in place with Nisichawayasihk Construction Limited Partners (NCLP) for the provision of equipment rentals and contract labour for work on the Wuskwatim roads. The contract is in effect until July 31, 2021.

SAFETY

Safety incident and activity reports are prepared monthly. During the past year, quarterly Workplace Safety and Health Committee meetings were held.

No lost-time incidents occurred during this fiscal year.

NAVIGATION SAFETY

During the 2018 open water season, two Nisichawayasihk Cree Nation members were hired through Manitoba Hydro's Waterways Management Program to patrol Wuskwatim Lake and gather data on debris type and quantity. The crew patrolled

a total of 3,969 kilometres of shoreline and removed an estimated 230 pieces of debris. This work will continue during the 2019 open water season. In addition to patrolling the waterways, the crew also provided safe transportation for ceremonies and various community events throughout the season.

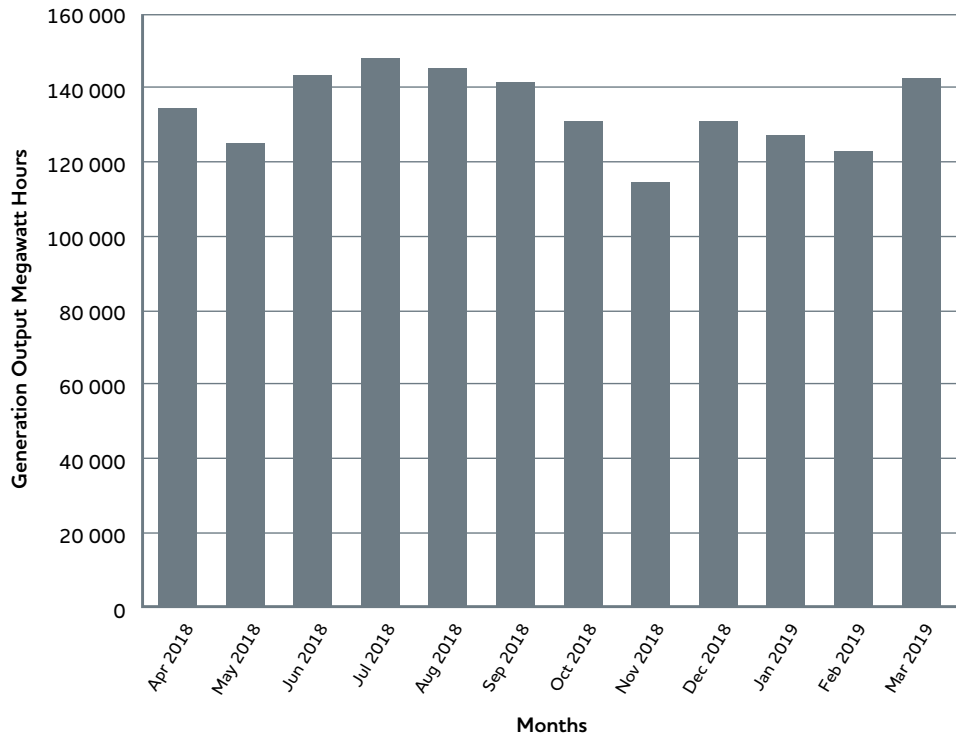
PLANT TOURS

In July 2018, attendees of the Midwestern Legislative Conference Energy Subcommittee were given a tour of Wuskwatim.

In September 2018, a tour was given to representatives from The Midcontinent Independent System Operator (MISO), North American Electric Reliability Corporation (NERC), United States officials, Midwest Renewable Energy Tracking System (M-RETS), Midwestern Governors Association (MGA), Government of Manitoba and Nisichawayasihk Cree Nation members.



Wuskwatim Monthly Net Generation Output



ENVIRONMENTAL MONITORING

As part of Wuskwatim's federal and provincial licensing requirements, a rigorous environmental monitoring program has been in place since before construction began. With the generating station now operating, the monitoring program has evolved to focus on potential operations-related components to determine if the station is having any long-term environmental impacts upstream or downstream, on lands along the access road and around the station site.

ETHINESEWIN MONITORING

Ethinesewin is the traditional knowledge and collective wisdom of Nisichawayasi Nehethowuk (the people from where the three rivers meet and who speak the language of the four winds) that has been communicated orally for generations.

Like the traditional knowledge systems of other Aboriginal peoples, *Ethinesewin* includes observation, classification, description and recording observations and results. The central focus of *Ethinesewin* is on relationships with and between the land, nature and people.

Nisichawayasi Nehethowuk, and in particular the NCN Elders, have been creating an understanding through *Ethinesewin* with Manitoba Hydro and Aski 'Otutoskeo Ltd (AOL) as an integral part of the environmental monitoring activities conducted during station construction and the current Wuskwatim operational phase.

The communicating of *Ethinesewin* is vital to ensuring the Project achieves *Kistethichikewin*, meaning the conduct of a person must adhere to the sacred responsibility to treat all things with respect and honour, according to *Kihche'othasowewin* (the Great Law of the Creator).

The following is a summary of the June 2018 Nisichawayasihk Elders *Ethinesewin* Monitoring Tour. Participating Elders included:

Participating NCN Elders:

- | | |
|-----------------------------|--|
| 1. Sam Dysart | Retired Fisherman/Trapper |
| 2. Lena Dysart | Retired Educational Assistant |
| 3. Dorothy Linklater | NCN Elder |
| 4. Darlene Mason | NCN Elder |
| 5. Mathew Wood | NCN Elder |
| 6. John Peter Spence | NCN Elder |
| 7. Joyce Wood | Retired Finance Assistant/NCN Elder |
| 8. Dolly Chisolm | Retired Nurse/NCN Elder |
| 9. Roland Spence | Plumber/NCN Elder |
| 10. Arthur Wood | Retired Carpenter/NCN Elder |
| 11. Darcy Linklater Sr. | Former NCN Councillor/NCN Elder |
| 12. Terry Linklater | Retired RCMP/NCN Elder |
| 13. Clara Hart | NCN Elder |
| 14. Clifford Hart | Pipe Carrier |
| 15. Fred Hart | Retired Electrician/Gardener/NCN Elder |
| 16. Abraham Lobster | NCN Elder |
| 17. William Henry John Wood | Medicinal Harvester/NCN Youth |



Arrival at Wuskwatim Village

Monday, June 18 marked the start of the NCN Elders 2018 *Ethinesewin* Monitoring Tour. Since the Elders were transported to Wuskwatim Village by boat, this required several trips. The Wuskwatim village was prepared and cleaned for their arrival by the *Ethinesewin* Monitoring crew. NCN ladies insisted that preparation of breakfast, lunch and supper would be done by them.

In early June 2018, the *Ethinesewin* monitoring crew came upon what they thought to be human remains at Early Morning Rapids. The remains were discovered on the east shore of Early Morning Rapids on a high embankment where the shoreline is granular with cobble shoreline and clay banks. The monitoring crew immediately offered tobacco, prayers and protected the remains with a tarp.

The NCN Elders that arrived early in the day were taken to Early Morning Rapids to assess and determine what should be done to the disturbed remains. The remains were protected and further discussion took place when all NCN Elders were present.



Day 1 Activity – Heritage

The day began with a visit to the remains at Early Morning Rapids. Prayer and tobacco were offered and the protocol for discovery of human remains was reviewed and discussed.

Elders observed the remains were on the east shore of Early Morning Rapids near the old portage. The remains were resting high enough away from the shoreline and were protected and secure.



Recommendations from Elders:

- The remains should be protected and for the duration of the summer the *Ethinesewin* monitoring crew should check on the remains weekly;
- Erosion of shoreline should be monitored; and
- If erosion continued to take place and the remains were at risk; NCN's Protocol for Disturbed Ancestral Human Remains would be implemented.



Day 2 – Erosion Monitoring

Several boats were used to allow Elders to observe erosion around the lake, brooks and rivers. NCN Elders have observed over time an increase in erosion to the shoreline, with new vegetation falling over and slumping. Mud slides were also evident on shorelines. The most concerning area was in the upstream Burntwood River to Early Morning Rapids.

Elders observed the following:

- The northern islands on Wuskwatim Lake that were once three large islands are now six islands.
- The rate of erosion happening around Wuskwatim Lake, rivers and streams is rapid.
- More trees are entering the water due to erosion and Elders felt this is a safety concern as the debris cannot be seen by boaters, especially on windy days.
- The debris on Wuskwatim Lake is incredible, always moving.
- Water levels fluctuate daily.

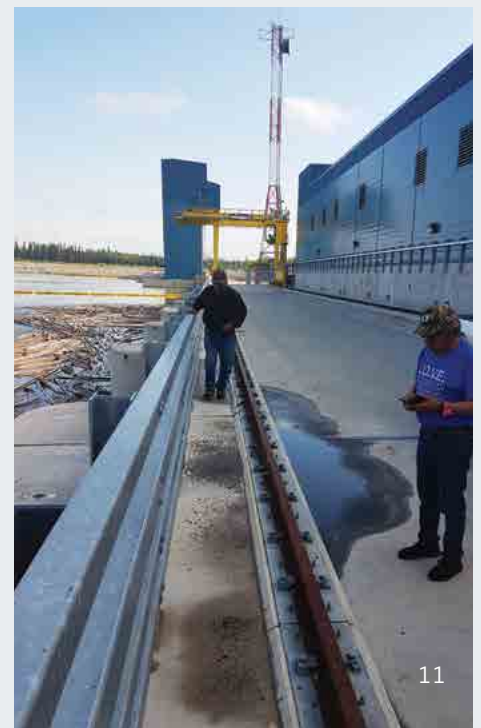




Day 3 – Wuskwatim Lake Monitoring

During their visit to the Wuskwatim forebay, Elders observed the following:

- Unusual amount of debris accumulating in the intake to the powerhouse.
- Erosion evident on the south side of shore.
- Collected debris being stored at tree lengths raising a concern for large fires. They recommend trees should be cut and stored at three-foot lengths similar to NCN's Debris Management Program.
- Elders wondered if a burn permit had been obtained from Manitoba Sustainable Development.
- Elders expressed concern with the movement of debris in the immediate forebay.
- Elders questioned why NCN's Debris Management Program has not been involved in the removal of debris to the intake to powerhouse.





Day 4 – Wuskwatim Access Road and Stream Crossing

Elders that participated in the access road and stream crossings inspections were quite concerned with the condition of the road. The most evident gullies in the road were at the stream crossings. Elders felt the gullies in the road are getting excessive and caution drivers to use care when travelling down the road.



Other observations included:

- Nuisance beaver on stream crossing 4. The Elders recommended setting traps to prevent beaver from causing further damage to the road.
- Alfalfa in the ditches of the Wuskwatim Access Road is spreading and removal of the plant by pulling is proving difficult. A solution needs to be found to control the plant as it is spreading and taking over local plant species.



Day 5 – Wuskwatim Village

Elders asked to have a trail cleared to allow easier access to the Wuskwatim gravesite. An area was identified and the Debris Management Program (DMP) crew assisted in clearing trees. Within two days the 2.5 km trail was completed. The trail was immediately utilized by Elders and time was spent visiting ancestors and collecting medicines.

Another project that was undertaken at Wuskwatim Village was the construction of a small storage shed. The shed will be used to store valuable equipment, protect tools from the elements and provide a covered work space for small projects.





Day 6 – Wuskwatim Cultural Centre

The day was spent at the cultural centre where general maintenance took place. Trees around the building were cleared and removed and the interior of the building was cleaned. Elders discussed how the building might be used as it is currently sitting empty. They would like to see if the building can be moved into the community for use as an Elders gathering centre.

Other recommendations included:

- Installation of a boat dock
- Replacement of the water pump

In addition to the above activities, Elders were able to fish and hunt for geese and ducks. These activities took place on Wuskwatim Brook, Sesap Brook and Cranberry Brook. Gardening proved to be successful at Wuskwatim Village as potatoes, carrots, tomatoes and onions were some of the vegetables harvested. Medicinal harvesting led by Henry Wood also took place at Sesap, Wuskwatim and Cranberry Brooks.



RESOURCE USE MONITORING

The Wuskwatim Resource Use Monitoring Program identified five monitoring components:

1. *Ethinesewin* (traditional knowledge, including the collective wisdom of Nisichawayasihk Nehethowuk (reported separately by NCN));
2. Harvest Calendar Study;
3. Country Foods Program;
4. Access road gate monitoring and Wuskwatim Lake; and
5. Commercial harvest data.

The 2018 resource use monitoring focused on three components: access road gate monitoring, the Harvest Calendar Study and commercial fishing.



Access Road

The Wuskwatim access road was identified in the EIS as potentially having the greatest effect on resource use. In 2018, access into Wuskwatim Lake for the purposes of resource harvesting included commercial fishers from September to mid-October and a group of approximately ten *Ethinesewin* program participants. Manitoba Hydro staff recreationally fished for about 15 to 20 hours.

Harvest Calendar Study

A third Harvest Calendar Study took place in 2017–2018. The study was conducted to collect current household resource harvest information in the Nelson House Resource Management Area and to compare these results with the 2001–2002 and 2013–2014 harvest calendar studies, which were conducted prior to the start of construction and early in the operations phase, respectively. The 2017–2018 report provides results after five years of operations. Results of the harvest calendar studies assist in understanding how resource harvesting has changed over time in areas affected by the Wuskwatim Generation Project and in other areas of the Resource Management Area (RMA). This information is also available to assist NCN with making decisions about future resource harvesting activities.

Of the 465 households in the community, 113 households participated in the study over the year. Results found that the number of households classified as non-harvesting (households that typically did not conduct harvests) vs occasional harvesters (households that spent at least

a day or weekend harvesting) shifted between the survey periods. The number of non-harvesting households was 45% in 2001–2002, 64% in 2013–2014, and 48% in 2017–2018, while the proportion of occasional harvesters was classified as 32%, 15%, and 27%, in 2001–2002, 2013–2014, and 2017–2018 respectively. The classification of intensive (households that spent over a month harvesting), active (households that spent a week or more harvesting), and unique households (households that harvested special resources) has remained similar over the same timeframe.

Estimated community-wide big game harvests increased from 2001–2002 to 2013–2014 to 2017–2018, while furbearer harvests remained approximately the same. Estimated bird harvests increased from 2001–2002 to 2013–2014 but remained at similar levels in 2017–2018, as did harvest of most species of fish except for increases in Walleye harvest.

The 2017 repatriation ceremony held in the Wuskwatim Lake area led to the harvest of medicinal plants like balsam fir, chaga, mint, weekis and wood for heating. Two bear harvests also occurred in the Wuskwatim Lake area this year. Despite efforts to harvest moose, none were harvested in the Wuskwatim Lake area, as they were in previous years. Very little trapping and few waterfowl harvests occurred in the Wuskwatim Lake area.

The Nelson House area and the northern portion of the RMA hosted the majority of harvesting activity in 2017–2018. The Nelson House area supplies more



waterfowl and birds, furbearers and small game, and medicinal plants than any other area in the RMA.

As in other years, the southwestern portion of the RMA provided the fewest resources. For the area outside of the RMA, harvests increased in 2017–2018 despite a lack of fish and waterfowl harvests. The increase is attributable to the opportunistic hunt of Penn Islands caribou to the east, and the presence of species less likely to be found in other areas of the RMA like deer, elk, sage and sweetgrass.

Results of the 2017–2018 study indicate that use and harvesting within the Wuskwatim Lake area has not increased substantially due to the access road, as was predicted in the EIS. Potential barriers that appear to be limiting the use of the area include NCN resource harvesters being discouraged by the physical barrier of the gate and rules pertaining to hunting within the site. Efforts will be taken to ensure that all NCN members are informed of the Wuskwatim Access Management Plan and procedures to gain access. Any concerns

regarding road access will also be addressed at the Partnership Board and the Monitoring Advisory Committee meetings attended by Manitoba Hydro and NCN.

Commercial Harvest

A total of 3,257 kg of Lake Whitefish and Walleye and an additional 3,976 kg of Northern Pike, Yellow Perch, Cisco, and suckers was harvested from Wuskwatim Lake by commercial fishers in 2018. The amount harvested is the lowest it has been since the commercial fishery resumed in the post-Project period. Fishers noticed far less debris because of Aski Outoskeo Ltd’s (AOL) Debris Management Program. Given this success, users felt debris should continue to be removed annually. Because of a lower Walleye catch, fishers did not regard Wuskwatim Lake to be profitable and intend to rest the lake for a few years before returning.

AQUATIC EFFECTS MONITORING

The Aquatic Effects Monitoring Plan (AEMP) for Wuskwatim provides for comprehensive monitoring of the aquatic environment during the second (2014), fourth (2016) and sixth (2018) year after the generating station (GS) is in operation. These studies compare current conditions to those before construction of the GS and to predictions in the EIS. Lake Whitefish and Walleye Fish Movement Monitoring Reports have been submitted for 2018 and are summarized below.

Lake Whitefish and Walleye Fish Movement

The EIS predicted that the fish community in the Burntwood River immediately below the generating station would be adversely affected by the decline in fish from upstream. This prediction was based on fewer fish attempting to move downstream and potential mortality as a result of turbine passage.

To test this prediction and effects to downstream fish movements, two studies were included the AEMP: a four-year movement study using acoustic telemetry and a turbine passage effects study (both reported in 2016).

Lake Whitefish and Walleye movements were monitored during operation to determine the amount of fish that moved downstream through the GS. Ninety Lake Whitefish and 90 Walleye were implanted with acoustic transmitters and movements were monitored with stationary acoustic receivers from May 2015 to May 2018. Monitoring took place throughout Wuskwatim Lake, the forebay and downstream of the GS to Opegano Lake.

Results showed that Lake Whitefish and Walleye move throughout Wuskwatim Lake but tend to show a higher degree of residency for the zone where they were tagged. Throughout the four-year study, very few fish moved downstream past the GS. In total, two Walleye (<1% of detected fish) and nine Lake Whitefish (5.7% of detected fish) moved downstream.

While fish movement results indicate very few fish appear to move downstream, it is too early to draw conclusions on the overall effects on the fish community.

TERRESTRIAL EFFECTS MONITORING

The Terrestrial Effects Monitoring Plan (TEMP) provides for comprehensive monitoring of the terrestrial environment during the operation phase of the Project. The intent of these studies is to compare current conditions to those prior to construction and to predictions in the Wuskwatim EIS. Reports submitted in 2018 include the Beaver Lodge Survey, Bird Collision Monitoring, Waterfowl Monitoring, Avian Monitoring, and Invasive Species Abundance and Distribution. The findings of these studies are reported below.

Beaver Lodge Survey

The EIS predicted potential project related effects to beavers on Wuskwatim Lake due to stabilized water levels near the upper end of the current range, and possible displacement of beavers downstream due to water level fluctuations. Effects were predicted to be small and insignificant to the local beaver population.

Aerial surveys were conducted from September 27 to 30, 2018 to collect data on the distribution and abundance of beaver lodges in the Wuskwatim Study Area. Comparisons were made between active lodge densities after the GS became operational (2016, 2017, and 2018) to three baseline years (2009, 2010, and 2011). The focus of the monitoring was to survey the shallow water zones

at water bodies and watercourses upstream and downstream of the GS, as well as at a nearby reference area unaffected by hydroelectric development

Despite hydrological changes due to the Project, the beaver population in the study area has remained stable. Following impoundment of the GS reservoir, relatively stable upstream water levels had a substantial positive effect on active lodge density, as expected in the EIS. Water level fluctuations downstream of the GS, which were common before and after the GS became operational, had a neutral effect although a negative effect was predicted. As a result, a neutral to positive effect on beaver has been observed in the overall study area.

Bird Collision Monitoring

The EIS predicted there were potential effects related to the risk of birds colliding with the transmission power lines and a communication tower near the GS. The predicted effects were expected to be small and not significant to local populations. Bird collision monitoring includes monitoring the frequency and types of birds colliding with the transmission lines and the communication tower during the fall migration period.

Results from 2018 found evidence of a few potential bird-wire collisions under the transmission line including a raven and a gull. At the communications tower, no evidence (e.g. feathers) of collision



mortality was found. The results of the 2018 study confirm EIS predictions that the effects of GS operations on birds, which included collision mortality, would be small to moderate, and not significant to local populations. The total estimated collision mortality at both sites remained similar across years and study periods, and comparable to rates of collision mortality with transmission lines and communications towers reported in the scientific literature. No evidence of federally or provincially listed threatened or endangered bird species mortality was found.

Waterfowl Monitoring

The EIS predicted there were potential effects on waterfowl during operations related to increased hunting in the Wuskwatim Lake area, and stabilization of water levels on Wuskwatim Lake potentially resulting in fewer nest-flooding incidences for waterfowl and other waterbirds.

Waterfowl surveys were conducted upstream and downstream of the GS to assess potential effects on waterfowl. Aerial surveys for waterfowl were conducted in May for breeding waterfowl, July for waterfowl broods and September for staging waterfowl. Aerial surveys followed the shorelines of waterbodies and all observed waterfowl were counted. Additionally, the number of waterfowl hunting parties observed was recorded during aerial surveys to provide an estimate of hunting pressure.

Distribution of waterfowl in 2018 appeared to be similar to that observed during the previous years of monitoring (2014 and 2016) and was relatively consistent between the different surveys. Waterfowl were distributed in relatively large flocks throughout off-system water bodies (reference and lakes and rivers unaffected by hydroelectric operations). Kinosaskaw Lake supported numerous small flocks of waterfowl during all surveys.

Within Project affected areas, waterfowl were distributed in relatively small flocks mainly in the Wuskwatim Brook area and Cranberry Lake.

It does not appear that operation of Wuskwatim is affecting waterfowl abundance or distribution. Waterfowl distributions observed during this survey appear to be similar to those observed during other operation monitoring surveys and pre-construction surveys. Predictions made regarding an increase in hunter access to Wuskwatim Lake do not appear to be occurring. The relatively stable water levels in Wuskwatim Lake suggest that Project operation is not affecting waterfowl nest success on Wuskwatim Lake.

Avian Monitoring

The EIS predicted there were potential effects on breeding birds due to construction and operation of the Wuskwatim access road. Potential effects included habitat loss and alteration, noise disturbance due to traffic on the main access road and mortality as a result of bird-vehicle collisions (this was expected to be very low during operation due to low traffic volumes). The objective of this study was to identify changes in breeding bird diversity and abundance due to traffic along the access road during operations.

Monitoring took place from June 4 to July 6, 2018 using hand-held audio recorders at 380 sites along the access road. Seventy-seven bird species were identified in 2018, 32 more than in 2014. This result was not unexpected, because

more habitats were surveyed and more frequently. While four fewer species were recorded in 2018 than in 2016, species composition was similar between these survey years. Common and abundant species in 2018 included ruby-crowned kinglet, hermit thrush, Nashville warbler, chipping sparrow, and white-throated sparrow. Listed species at risk identified in 2018 were the Canada warbler, eastern whip-poor-will, olive-sided flycatcher and rusty blackbird.

Invasive Plant Distribution and Abundance

Invasive plants are a concern because they have the potential to cause adverse effects on natural ecosystems. They can crowd out other plant species and, in extreme

cases, change vegetation composition. They can also alter other ecosystem attributes, such as soil conditions.

The EIS predicted that the Project was not expected to significantly increase the risk that invasive or other non-native plants would crowd out sensitive species or change terrestrial habitat composition.

The 2018 surveys were conducted along 36% of the shorelines within the area affected by the Project. These surveys found that non-native plant abundance was generally very low. Non-native plants were present along only 0.9% of the surveyed shoreline with the exception of the Burntwood Upstream zone (Burntwood River upstream of Cranberry Lake).



In the Burntwood Upstream zone, non-native plants were present along 74% of the surveyed shoreline. This percentage was very high compared with all of the other zones (3.1% of surveyed shoreline was the highest percentage in any of the remaining zones). Possible reasons for the very high percentage in the Burntwood Upstream zone included: non-native plants were already established in the Burntwood Upstream zone prior to the Project, facilitating more widespread establishment; the Burntwood Upstream zone is downstream of inhabited areas making this zone the most likely to receive seeds dispersed by riverine processes; activities and boat traffic originating from the Project footprint spreading seeds into this zone; and, relatively high or low levels of some influential factors (e.g., riverine morphology, higher proportion of mineral substrates, low wave energy or current) that facilitated more rapid and/or widespread establishment.

Monitoring in 2018 identified a total of eight non-native species on the surveyed shorelines. Five of the eight species were found only along the north dyke in the Wuskwatim forebay, and had likely spread there from adjacent inland Project areas where they were already well-established.

An Invasive Species Control Plan is being developed with recommendations on measures to control the spread of invasive species.



PHYSICAL ENVIRONMENT MONITORING

The Physical Environment Monitoring Program (PEMP) is an adaptive program designed to measure various physical environment components that may experience some change from Wuskwatim Generating Station operations. Physical environment components addressed in the PEMP include climate, water regime, erosion, sediment transport and woody debris. The geographic area subject to PEMP monitoring includes a section of the Burntwood River upstream of the Wuskwatim Generating Station to the foot of Early Morning Rapids, including Wuskwatim Lake, and downstream to Birch Tree Lake.

Climate

To characterize climatic conditions in the Wuskwatim monitoring area, weather data from six meteorological stations within the region were analyzed. Due to the quality and length of the climate record at Thompson, this site was selected as an indicator climate station. The 2018–19 annual average temperature recorded at Thompson was 0.5°C warmer than 1981 to 2010 normals and total annual precipitation was 100mm above normal.

Water Regime

Flows at the Notigi Control Structure were near the operating maximum for much of the monitoring period. Flows were reduced slightly from mid-April to mid-May during the spring melt. Wuskwatim Lake operated within its licence limits of 233.75 metres to 234.0 metres.

Shoreline Erosion

Comparing 2018 to the previous year, annual bank recession rates at the lake monitoring sites revealed similar recession rates to those of 2017 (0.45 metres per year compared to 0.43 metres per year). Zero recession was measured at the riverine sites in 2018, as was the case in the previous year.

Lake Monitoring Sites

Of the 18 unaltered sites surveyed:

- Six had negligible average bank recession rates since 2017 (less than 0.25 metres per year);
- Six had moderate recession rates (0.25 to 0.99 metres per year); and
- Six had recession rates greater than one metre per year.

River Monitoring Sites

Of the three unaltered riverbank erosion sites downstream of the station:

- Three had negligible average bank recession rates since 2015 (less than 0.25 metres per year);
- None had moderate recession rates (0.25 to 0.99 metres per year); and
- None had recession rates greater than one metre per year.

The post-Project increase in erosion rates at lake sites is consistent with a predicted increase due to the Project. It was also predicted that rates would decrease in the long term as shorelines gradually eroded back to bedrock.

Sediment Transport

Sediment transport data was collected at 20 locations upstream and downstream of the generating station in the summer of 2018.

Total suspended solids, turbidity data, and sediment grain size were measured at each site.

The average suspended-solids concentrations and turbidity levels observed were consistent with past observations. The results do not indicate any change in sediment-transport conditions at the monitoring sites.





SOCIO-ECONOMIC MONITORING

With the generating station now operational, socio-economic construction monitoring has concluded and operational employment is being tracked through the life of the Project.

Direct Employment

During 2018–19, the majority of employees working at Wuskwatim were Mechanical and Electrical Technicians, Utility Workers and Operating Trainees. Other positions employed at Wuskwatim included Storekeepers, Maintenance Planners, Administrative Representatives and supervisory staff. As at the end of March 2019, there were 16 full-time employees and four rotational trainees. Fifteen are Indigenous and three are NCN members.

Indirect Employment

Indirect employment throughout the year included terrestrial and aquatic environmental monitoring during the 2018 field season, including: semi-aquatic fur bearer mercury sampling, spring larval fish sampling, waterfowl aerial surveys, commercial fishery monitoring, fish movement monitoring, beaver lodge and dam surveys, Early Morning breeding bird surveys, acoustic monitoring, sediment trap and habitat truthing and monitoring of sensitive plants, benthic macroinvertebrates, water quality and fish community. Employment associated with this in 2018–19 resulted in over 2,500 hours of work or approximately 1.3 person-years of employment.

Since operations began in 2012 to the end of 2018–19, there have been almost 22,500 hours of indirect work, associated with environmental monitoring, or approximately 11.2 person-years of employment. A person-year of employment is defined as one full-time job for one year, which is typically about 2,000 hours of work.

PHASES OF OPERATIONAL MONITORING

With the transition to operations, a 15 year, two-phase technical monitoring plan was developed beginning with the 2013–14 fiscal year. Phase 1, ending in 2019–20, is mapped out in detail. Once phase 1 findings are complete and analyzed, a phase 2 plan and schedule will be developed to cover the subsequent seven-year period ending in 2025–26.

Components	Year 6 2018/19	Year 7 2019/20
ETHINESEWIN MONITORING		
Traditional Knowledge Annual Tour	•	
BIOPHYSICAL MONITORING		
AQUATIC		
Water Quality	•	
Fish Community	•	
Invertebrates	•	
Fish Movements	•	
Bioengineering Sites		
Mercury in Fish	•	
No Net Loss Plan	•	
TERRESTRIAL		
Birds	•	
Plants	•	
Mammals	•	
RESOURCE USE		
Harvest Calendar Study		
PHYSICAL MONITORING		
Climate	•	
Water Regime	•	
Erosion	•	
Sediment Transport	•	
SOCIO-ECONOMIC MONITORING		
Operations Employment	•	

Evaluation and Adaptive Management

2018–2019 FINANCIAL REPORT

Statement of Loss

(for the year ended March 31)

(in millions of dollars)	2019	2018
Revenue	108	91
Expenses		
Operating and administrative	10	9
Finance expense	77	77
Depreciation	19	19
Amortization	6	6
Water rentals	5	5
	117	116
Net loss	(9)	(25)

Partnership Assets, Liabilities and Equity

(as of March 31)

(in millions of dollars)	2019	2018
Assets		
Property, plant and equipment	1 216	1 234
Intangible assets	264	270
Current assets	35	21
	1 515	1 525
Liabilities and Equity		
Current liabilities	24	23
Long-term debt	1 403	1 405
Partners' capital	88	97
	1 515	1 525

Partners' Capital
(as of March 31, 2019)

	Units	%	(net) Capital (in millions of dollars)
General Partner ¹	32.967	0.01	–
Manitoba Hydro	220 843.700	66.99	59
Taskinigahp Power Corporation	108 790.000	33.00	29
	329 666.667	100.00	88

Operating, Financing and Investing Activities
(for the year ended March 31)

(in millions of dollars)	2019	2018
Operating Activities		
Cash receipts from customers	111	85
Cash paid to suppliers	(14)	(14)
Interest paid	(77)	(77)
Cash provided by (used for) operating activities	20	(6)
Financing Activities		
(Repayment of) proceeds from long-term debt	(2)	12
Cash (used for) provided by financing activities	(2)	12
Investing Activities		
Additions to property, plant and equipment	(1)	(4)
Other	(17)	(2)
Cash used for investing activities	(18)	(6)

¹ The business affairs of WPLP are carried out by a general partner (GP), 5022649 Manitoba Ltd., a wholly owned Manitoba Hydro subsidiary.



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