



Keeyask Generation Project

Year in Review



APRIL 2018 - MARCH 2019



KEEYASK

Hydropower Limited Partnership

Keeyask includes three separate projects, the Keeyask Infrastructure Project, the Keeyask Generation Project and the Keeyask Transmission Project. The Keeyask Generation Project (the Project) is a collaborative effort being undertaken by the Keeyask Hydropower Limited Partnership (KHLP or the Partnership) - a partnership between Manitoba Hydro and four partner First Nations: Tataskweyak Cree Nation and War Lake First Nation (acting as the Cree Nation Partners); York Factory First Nation and Fox Lake Cree Nation. The Keeyask Infrastructure Project, which was completed in 2014, was also developed by the KHLP. The Keeyask Transmission Project is being developed by Manitoba Hydro outside of the scope of the Partnership.

The 2009 Joint Keeyask Development Agreement (JKDA) between Manitoba Hydro and the partner First Nations governs how the Project will be developed and sets out understandings related to potential income, training, employment and business opportunities. Manitoba Hydro provides construction, operations and management services to the KHLP and will own at least 75 per cent of the equity of the Partnership. The four First Nations together have the opportunity to own up to 25 per cent of the Partnership and will make their final investments once the station is fully operational.

The Keeyask Generating Station will be a source of renewable energy, providing approximately 695 megawatts of capacity and producing an average of 4,400 gigawatt hours of electricity each year. The energy produced will be integrated into Manitoba Hydro's electric system for use in Manitoba and to export to other jurisdictions. The generating station is located on the Nelson River approximately 30 kilometres west of Gillam, in the Split Lake Resource Management Area and within the ancestral home land of all four partner First Nations. It is anticipated that the first generator unit will be in-service by October 2020 and that all remaining units will be commissioned in the year following.



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Message from the Board of Directors

The Board of Directors is pleased to present the 2018-19 Keeyask Generation Project Year in Review.

For much of the past year, Board Directors and senior leaders from among the partners have discussed how best to support good dialogue and mutually respectful relationships at the Board table. These discussions have led to new means of working together at the Board level, including agreement on a new Board chair from Fox Lake Cree Nation and exploring a possible role for Elders to support the work of the Board. These conversations have not always been easy; however, they have led to the creation of a strong path forward for continued deliberations about the Project at the Board level and within the various Project committees.

Ongoing efforts to mitigate the social impacts of the Project continue to be a priority focus for Board members. In response to concerns raised by the partner First Nations about increased use of drugs and alcohol in the region and potential incidences of sexual harassment and violence linked to the Project, actions taken have included:

- Providing additional addiction treatment opportunities for those seeking assistance;
- Hiring a substance abuse professional to provide follow-up support at site and in the communities to enhance training opportunities for community service providers; and
- Meeting with a regional team tasked with the prevention of sexual exploitation to discuss what resources and supports are needed, and to seek assistance in developing and implementing on-site training and communication materials.

A number of initiatives were also put in place to ensure site policies and practices are applied consistently and in a timely

manner, along with improved communication and transparency for individuals filing complaints under the Harassment and Discrimination Free Standard. This work continues through a focused sub-committee of the Board, as well other site committees, that are actively looking at the success of these measures and any new opportunities to create a welcoming and inclusive environment at the Project site.

Aboriginal Traditional Knowledge and technical science monitoring continue to be used to follow up on the predictions in the Environmental Impact Statement and assess the effectiveness of mitigation measures. There are only a few years left to complete construction of the Project and planned mitigation measures are being carried out. A substantial amount of monitoring has been undertaken over the last five years to understand the effects of construction and to prepare for longer-term operational monitoring.

On the construction front, significant progress has been achieved over the past year. This has included:

- Placing more than 115,000 m³ of concrete, which equals 86 per cent of the total volume of concrete required. This marks a significant improvement from previous years;
- Placing over 3.7 million m³ of material for the earth structures, primarily for the permanent earth structures;
- Commissioning the Spillway gates, guides and hoists and diverting the Nelson River through the Spillway in August 2018, and;
- Meeting or exceeding all 2018 milestones.

The Keeyask Partnership continues to support local businesses. Since the beginning of construction, 19 Direct Negotiated Contracts (DNCs), worth over \$700 million, were awarded to partner First Nations businesses. Sixty-one per cent of goods and services purchased in Manitoba have been from northern Indigenous businesses. These efforts have important direct and indirect benefits to the local economy and communities.

Since project inception, one of the Partnership's main objectives was to maximize employment and training opportunities for partner First Nations and other northern Indigenous communities. This year the Project achieved a new peak for partner First Nations employment numbers. As well, as of March 31, 2019, 1,738 Indigenous employees participated in training opportunities including 614 from partner First Nations.

Safety has been a priority since the beginning of the Project and efforts have been made to continually strive to improve employee and contractor safety performance. We are pleased that over the past year, there were 20 per cent fewer safety incidents than in the previous year despite an increase in nearly one million more person hours. A number of new initiatives were undertaken to improve safety, which are further described in this review.

The Board remains committed to providing all employees with a safe, healthy and respectful work environment.

Thank you. Ekosi.



KHLP Board members

Back row from left to right: Lorne Midford (Manitoba Hydro), Anthonie Koop (Manitoba Hydro), Robert Wavey (Fox Lake Cree Nation), Chief Doreen Spence (Tataskweyak Cree Nation), Louisa Constant (York Factory First Nation), Greg Epp (Manitoba Hydro).

Front row from left to right: Jeffrey Betker (Manitoba Hydro), Chief Betsy Kennedy (War Lake First Nation), John Kreml (Manitoba Hydro), Vicky Cole (Manitoba Hydro), Nancy Willms (Manitoba Hydro).

Missing from photo: Nathan Neckoway (Tataskweyak Cree Nation)

2018-19 Keeyask Generation Project – Year at a Glance



Spillway and earthworks progress in June 2018



Powerhouse construction in March 2019

Construction

The 2018-19 fiscal year was the most successful year of construction to date on the Project. More than 115,000 cubic metres (m³) of concrete was placed, and 86 per cent of the total volume of concrete required for the Project is now in place. Over 3.7 million m³ of material for the earth structures was also placed. Both of these accomplishments were large improvements over past years and was the first time the Project achieved the target quantities for concrete and earthworks over a full construction season. In August 2018, the Spillway was commissioned and the entire river flow was diverted to pass through the Spillway.

As a result of the strong performance during the 2018 construction season, the first unit is on track to be in-service by October 2020, which is a full 10 months ahead of the schedule. Schedule advances have helped to lower the forecasted project costs and are the main reasons the Project is now likely to meet its budget of \$8.7 billion. Even with these advances, the Project team is committed to find ways to lower costs as there is still a lot of work remaining.

Employment and Business Opportunities

In 2018-19, 34 per cent of the total number of individuals employed on the Project were Indigenous. Nineteen Direct Negotiated Contracts (DNCs), with a total value of over \$700 million, were awarded to partner First Nations businesses on the Keeyask Infrastructure and Generation Projects, ranging from camp services to heavy construction. Sixty-one per cent of Manitoba expenditures on goods and services were purchased from northern Indigenous businesses. Over the past year, efforts were made to reach out to members in the partner First Nations communities to encourage increased interest in working on the Project. Additional efforts focused on making it easier for northern Indigenous workers to enter apprenticeships, and fill open, on-the-job training opportunities for both designated and non-designated trades, achieving a new peak for the partner First Nations employment numbers in the summer of 2018.

Efforts to foster a positive workplace environment at the Project site are continuous and ongoing. Over the past year, efforts have been focused on ensuring site policies and processes are applied consistently and in a timely manner. On-site training in conflict resolution and workplace investigations is being provided to front line supervisors and others. A Respect Campaign is ongoing at site. The Diversity and Inclusion Committee, founded at site in 2018, organizes monthly initiatives on site to honour and promote an inclusive workplace,



River Diversion Ceremony

including activities around Orange Shirt (residential schools) Day, Stop Hunger Day, cultural diversity and Pink Shirt (anti-bullying) Day.

People and the Environment

The partner First Nations raised concerns that the Project is contributing to an increase in possible cases of sexual exploitation and sexual assault. With the assistance of Tracia's Trust (Province of Manitoba's Sexual Exploitation Strategy), training and communication materials have been developed and delivered on site. Manitoba Hydro offers related monthly awareness sessions at the Project site in the evenings. Project Site and Camp Rules were amended to make it clear that purchasing and propositioning sex is illegal, and new documentation includes crisis contact numbers and information regarding sexual exploitation.

Employee Retention and Support Services (ERS) held a River Diversion ceremony in August 2018. The ceremony allowed people to acknowledge changes to the land and water and help offset the negative effects of construction. It was an emotional day for many as community members reflected on time spent with their families on the land and the water prior to Project development. The ceremony also provided cultural awareness to Project employees about the sacred relationship Cree people have with the land and water, and the Cree worldview that everything is connected.



A juvenile Lake Sturgeon caught on Stephens Lake September 2018

As fish is an important part of a healthy traditional diet and offers many important health benefits, the Mercury and Human Health Implementation Group is working to build understanding in the partner First Nations communities about mercury and the risks and benefits of eating fish. One activity included a "Know Your Number" campaign developed to generate interest about voluntary hair sampling and food surveys. The goal is to help partner First Nations community members understand their personal mercury exposure and to make informed decisions about their fish consumption practices. FLCN and TCN hosted pilot events in February 2019.

The winter of 2018-19 was the second winter in a row where high numbers of migratory caribou moved through the Keeyask region, with many caribou observed right at the Project construction site. The migration in early February had many animals come near the partner First Nations communities which allowed community members to have a successful harvest. There were also reports of other communities coming into the area and harvesting a large number of caribou and concerns about respectful harvesting were raised. Discussions are on-going about what could be done to manage this in the future.

In 2018, adult and juvenile Lake Sturgeon monitoring took place in the future Keeyask reservoir and Stephens Lake. Large numbers of adult and juvenile sturgeon were caught in both locations. There were enough adult sturgeon



FLCN staff help promote community mercury hair sampling event

caught in Stephens Lake to estimate the number of fish in the lake for the first time. The 2018 Stephens Lake estimate was 296 adults. The estimate of the number of adult sturgeon in the future Keeyask reservoir was 820. Both population estimates appear to be increasing since monitoring began in 2001. Population estimates of juvenile sturgeon were generated for the first time, with an estimated 4,133 juveniles in the future Keeyask reservoir and 1,101 juveniles in Stephens Lake.

Areas that become isolated from the river by cofferdams have the water pumped out so that Keeyask can be built. Fish found in these areas must be captured and released back into the Nelson River. In 2018, over 22,000 fish were collected mainly from the cofferdam that surrounds the future tailrace area. All of the fish captured were released to the river safely away from construction activities. Since the start of construction, over 100,000 fish were salvaged.

The Partnership

The Keeyask Hydropower Limited Partnership will own the Keeyask Generating Station. The Partnership consists of the General Partner (5900345 Manitoba Ltd.), Manitoba Hydro and partner First Nations investment entities including Tataskweyak Cree Nation and War Lake First Nation (acting as the Cree Nation Partners); York Factory First Nation and Fox Lake Cree Nation. The General Partner is a wholly owned subsidiary of Manitoba Hydro and is responsible for managing the business of the Partnership and is liable for all of its debt.

Outlined in the JKDA, Manitoba Hydro is contracted to construct, manage, operate and maintain the Keeyask Generating Station. Manitoba Hydro, carrying out its duties as the Project Manager, has established contracts for nearly all work required to build the Project. Several construction services, labour and materials contracts were directly negotiated with the partner First Nations; the general civil, electrical and mechanical contracts were publicly tendered.

Manitoba Hydro in consultation with the partner First Nations, established a website for the KHLP – www.keeyask.com – which will be maintained for the life of the Project. Keeyask.com contains information related to the Partnership, construction, employment and training, and the Environmental Protection Programs -including mitigation and monitoring.

Manitoba Hydro, the General Partner, and each of the partner First Nations investment entities have made initial investments in the equity of the Partnership.

Manitoba Hydro and the General Partner will own at least 75 per cent of the equity and the partner First Nations, through their respective investment entities, can own up to a total of 25 per cent.

The General Partner is governed by a Board of Directors, which consists of seven Manitoba Hydro and five partner First Nations representatives. The Board meets up to four times per year and its inaugural meeting was held in December 2014. In addition to the Board, three formal advisory committees exist for the Project – a Monitoring Advisory Committee to review the outcomes of environmental mitigation and monitoring; a Construction Advisory Committee that reviews the status of construction activity; and an Advisory Group on Employment to discuss construction employment at the site. These committees

have representation from the partner First Nations and Manitoba Hydro and have been meeting on a regular basis since late fall 2014.

Each year, Manitoba Hydro awards a Keeyask Leadership Scholarship to a Grade 12 youth member from each of the partner First Nations. The scholarship is awarded to a graduating student from each of the communities who has shown outstanding leadership qualities in school and the community. In 2018, scholarships were presented to Cassidy Harlan Mayham (Tataskweyak Cree Nation), Liam Lockhart (War Lake First Nation), Chase Burns (York Factory First Nation) and Keenan Jobb (Fox Lake Cree Nation).

The Manitoba Hydro Keeyask Leadership Scholarship was created to celebrate the signing of the JKDA in 2009.



Construction Advisory Committee

The Construction Advisory Committee (CAC) is a forum for all partners to share information and to discuss construction activities related to the Project. It meets regularly to review construction updates on current and upcoming construction activities related to the Project, and provides a way for committee members to keep their respective communities informed about construction progress and activities.



Construction Advisory Committee members touring the Powerhouse

The meetings generally take place at the Project site, where members are able to see first-hand the progress of construction through tours led by the Site Liaison team. During 2018-19, CAC members toured the Spillway and Powerhouse, viewed construction of the South Access Road and Bird Island, were able

to see the water-up of the Spillway in progress, and site preparation for the River Diversion Ceremony. Committee members also received presentations on a variety of topics from the General Civil Contractor (BBE), Sodexo, and the Employee Retention and Support Services team.



Construction Advisory Committee

From left to right: Dylan Desjarlais (MH), Vince Kuzdak (MH), Marie Ryle-Beardy (YFFN), Jimmy Beardy (YFFN), Jake Quiring (YFFN advisor), Michael Cobb (WLFN advisor), Kathy Wavey (WLFN), Leah Macdonald (MH), Richard Goulet (MH), Donna Saunders (YFFN).

Missing from photo: Michael Kirkness (TCN), Leroy Spence (TCN), Betsy Harvey (TCN), Michael Keeper (TCN), Dwayne Flett (WLFN), Roy Ouskun (WLFN), Noah Massan (FLCN), Joanne Lavallee (FLCN), Conway Arthurson (FLCN advisor), Brenda Froese (MH), Barry Nazar (MH), Dave Little (MH), Shelden Collins (MH).

Monitoring Advisory Committee



Monitoring Advisory Committee, Downstream Boat Launch

Front row (from left to right): Russ Schmidt (MH), Shelden Collins (MH), Molly Beardy (WLFN), Diana Mager (MH), Stefanie Spence (FLCN), Jodine MacDuff (MH), Vicky Cole (MH), Monica Wiest (MH), Eily Bonny (YFFN advisor), Donna Saunders (YFFN). Back Row (from left to right): Joanne Lavallee (FLCN), John Whitaker (WLFN advisor), Darcy Wastesicoot (YFFN), Kurt Fey (MH), Laura McKay (MH), Carolyn Northover (MH), Raymond Beardy (WLFN), Jimmy Lockhart (FLCN).

Missing from photo: Joseph Harvey (TCN), Douglas Kitchokeesik (TCN), Jonathon Kitchokeesik Sr. (TCN), Robert Spence (TCN), Dwayne Flett (WLFN), Roy Ouskun (WLFN), Jimmy Beardy (YFFN), Val Massan (FLCN), Conway Arthurson (FLCN advisor).

The Monitoring Advisory Committee (MAC) meets six times per year, normally in Thompson, and provides a forum to share social and environmental information related to the Project. Topics are discussed and considered using both technical science and Aboriginal Traditional Knowledge (ATK) perspectives. In 2018-19, each of the partner First Nations communities described the work

they are undertaking through their ATK monitoring programs and where they are focussing their attention.

Presentations on topics of interest continue to be a regular part of the MAC meetings. Detailed presentations were given at meetings to gain a greater understanding of the Project's environmental issues including: zebra

mussels and their spread; climate change and how it is predicted to affect Keeyask; sturgeon stocking and success of stocking efforts to date; and how spills of petroleum products and other substances are managed and cleaned-up.

The activities of the Mercury and Human Health Implementation Group, particularly the voluntary hair sampling program were shared with the MAC. Some MAC members had their hair sampled at a meeting.

Annually, the MAC sponsors open houses in the partner First Nations communities to share and discuss the results of the monitoring activities and environmental mitigation measures that are being undertaken. Early in 2019, open houses were held in the partner First Nations communities and one was held at the Keeyask camp. The community open houses focused on providing information and environmental activities to the students from the schools to get them interested in the Project.



Open house at Keeyask Main Camp

**Roy Joseph Redhead, York Factory First Nation
(Red Thunderbird Man)**

October 21, 1958 – September 20, 2018



This past year, MAC member, Roy Redhead passed away. His passion for environmental protection had a strong influence on the committee. He will be missed and remembered.

Doing everything I can to lay the path they will follow

Oh spirits flow like a river to the sea

Where does the time go?

When I'm called and it's time for me to leave this earth

Bury my bones where the north wind blows endlessly

Put me up, turn my face to the sky up above

Sing me away, send me off on that spirit ride.

Where does the time go?

Where does the time go?

Now is the time.

– *Where does the time go* lyrics from Roy Redhead's CD *Towards the Light*

Advisory Group on Employment

The Advisory Group on Employment (AGE) is a forum for addressing employment-related issues, in particular Indigenous employment, related to the construction of the Project. The AGE has created a collaborative environment for interaction, fact finding, and developing solutions to issues that are raised. It includes representatives from the Province of Manitoba, contractors, Manitoba Hydro, the Hydro Projects Management Association, Allied Hydro Council and the partner First Nations. Over the past year, a continued emphasis was placed on reducing the obstacles for northern Indigenous workers to begin work at Keeyask, enter apprenticeships, and to fill open on-the-job training (OJT) opportunities. The aim is to maintain the partner First Nations' peak employment numbers achieved to date and to have more Indigenous workers trained for job opportunities beyond Keeyask.

Job Seeker Managers (JSMs) are based in each of the four partner First Nations and are supported by the Province of Manitoba, the Thompson Job Referral Service (JRS) team, and Manitoba Hydro. Each JSM is responsible for developing and implementing an annual community employment plan with a focus on the employment opportunities at Keeyask. All four plans are unique, but also have common goals including: community engagement, aligning member skill set with employment/training opportunities, improving the ability for employers to make contact with members, and ensuring that members' qualification profiles are up to date. In addition, Keeyask Cree Nations (KCN) site Representatives (Reps) support the JSMs and help contact community members referred for a job or for an open training opportunity.

Community engagement sessions continued in the partner First Nations communities to inform job seekers about the various opportunities at Keeyask and for attracting potential workers to consider Keeyask. The events include the contractors who share company and job information, representatives from the Job Referral Service, Workplace Education Manitoba, and Apprenticeship Manitoba. Job seekers were able to

learn about employment and training opportunities at Keeyask, register with the JRS, participate in career planning, sign-up for essential skills upgrading, and speak with various contractor representatives about what it means to work at Keeyask or be in the apprenticeship program.



Advisory Group on Employment

Front Row (from left to right): Stephanie Towers (MET), Jason Peterson (HPMA), Dave Little (MH), Ashlynn Mayham (TCN), Jessie Lavallee (FLCN), Dolly Peters (FLCN), Jackie Lagimodiere (MET), Chief Betsy Kennedy (WLFN), Tim Johnson (MH), Michael Cobb (WLFN advisor).

Middle Row (from left to right): Khangendra Dhakal (MET), Cheryl Linklater (WEM), Kathy Wavey (WLFN), Pamela Beardy (FLCN), Vanessa Beardy (FLCN), Kelly Bryll (MH), Edna Beardy (AHC).

Back Row (from left to right): Sudhir Sandhu (AHC), Jessica Huff (Sodexo), Brian Finch (Sodexo), Jennifer Ehrenfeld (HPMA), Richard Goulet (MH), Jeff Dempsey (Sodexo), Paul Avila (NMS), Ashley Mushumanski (NMS), Don Ritchie (BBE), Jennifer Sinclair (MH), Robin Gislason (MH), Keri Orbeck (Voith), Brian Freeze (BBE), Martha-Lee Riopel (Voith), Sonya Dhami (BBE).

Missing from photo: Roy Ouskun (WLFN), Vince Kuzdak (MH), Sarah Cole (TCN), Wendy Saunders (YFFN), Theresa Beardy (YFFN), Jake Quiring (YFFN advisor), Michael Garson (TCN), Craig Saunders (YFFN), Christine Peters (FLCN), Troy Smith (NMS), Kris Remillard (Canmec).

The AGE has identified a key factor to increasing the partner First Nations workforce on the Project, which is reducing the number of job seekers who cannot be contacted. Several strategies are being used to ensure registration contact information is up to date such as: career counseling, community based employment sessions, and assisting with updating candidate profiles. Additional methods of contacting candidates continue to be used including: emails; cellular texts; phone calls during weekends, holidays, and the time preferred by job seekers; Facebook postings; and Messenger texts.

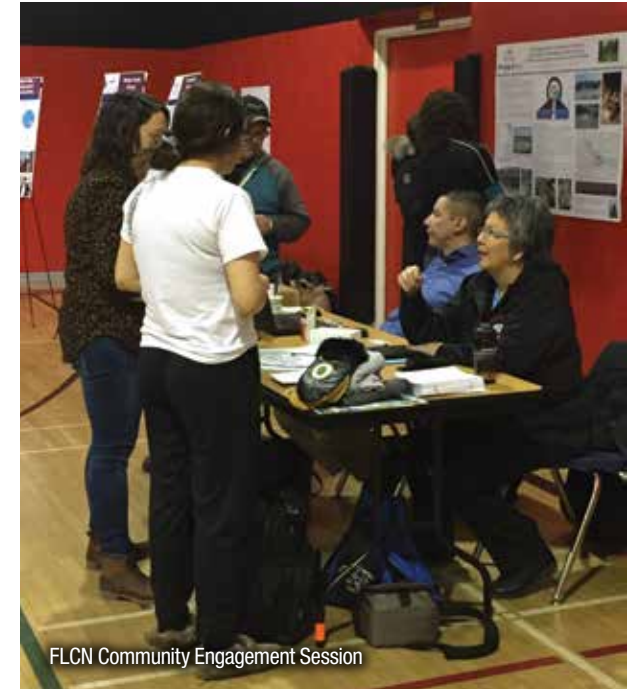
From February 4 to 7, partner First Nations job seekers, who had not previously worked at Keeyask, attended a two day Site Orientation session. The attendees had the opportunity to experience the Project first-hand, learned more about employment and training opportunities from the contractors, and found out what it is like living and working at Keeyask. Attending community members showed great interest in learning more about Keeyask and becoming employed on the Project.

The Keeyask Engagement Project (KEP) Referral List continues to be used by the Province and partner First Nations to identify individuals interested in training opportunities on the Project. Used primarily by contractors for identifying direct hires, KEP is maintained by the Province of Manitoba and identifies an individual's current experience and preferred area of employment. The KEP Referral List is distributed regularly to contractors to direct hire individuals into training and apprenticeship opportunities prior to posting a job order through the JRS. Use of the KEP Referral List for direct hire received positive reviews from both contractors and job seekers, and has proven to be successful in identifying and filling training and apprenticeship positions in an efficient manner.

The Keeyask Workplace Essential Skills Training (KWEST) Centre continued to operate at site throughout the reporting period and provides new and existing workers access to skill development support, to enhance their capacity to participate in on-the-job training, to carry out workplace tasks effectively and efficiently, and to prepare for advanced training and employment opportunities. Essential skills assessment, administered by Workplace Education Manitoba, creates the candidate's development plan for the trade they are in or are interested in pursuing. The tool allows the trainer and student to address skill gaps through tutorials and small group sessions which are provided at the Centre.



Contractors continue to use the Centre to deliver targeted training in support of their skill development programs for their workforce. Since its inception, KWEST has provided services to over 270 clients who have benefited from the support and ongoing instruction offered through the Centre.



Site Liaison

The Site Liaison team's main focus is engaging the partner First Nations on all Project activities. The team consists of the Site Liaison Lead, two Liaison Officers and a KCN site representative from each of the partner First Nations communities. The liaison team continues to support collaboration between the four partner First Nations and the site contractors with a high emphasis on employment and training opportunities, as well as cultural activities. The team works closely with the Employee Retention and Support Services team where the focus has been on providing support to all Project workers. Additional key roles added this past year include, membership on the Keeyask Project Diversity and Inclusion Committee and the Harassment and Discrimination Free Workplace Implementation Task Force.

Over the past year, Site Liaison staff worked closely with the KCN Site Reps to:

- Engage community members in employment and training;
- Assist with communication between contractors and community JSMs;
- Facilitate improved communication with partner First Nations workers at site; and
- Coordinate Elders visits to site to help them connect with their family and community members working at site.



MH Site Support Staff from left to right: Shelden Collins, Mark Jessop, Dave Little, Vince Kuzdak, Rita Spence, Jayson Kowal, Rob Lambert, Paul Peacock, Kim Kelly



The Site Liaison staff and KCN Site Reps are also members of and participate in CAC, MAC and AGE meetings as well as the open houses where updates on environmental monitoring activities are provided to community members.

Keeyask site tours were a consistent activity throughout the whole year. A variety of individuals and groups expressed interest in coming to site to learn about the Project and to gain more insight on employment and training opportunities. Requests for site tours came from many groups, including: schools and training centres in northern Manitoba, members of the partner First Nations, the Project committees, and various Manitoba Hydro departments. The Site Liaison Team coordinated 64 tours, which included 564 visitors to site.



Keeyask Workplace Culture

The KHLP is committed to creating a respectful workplace culture for all employees at the Project site. As predicted in the Environmental Impact Statement (EIS), construction of the Project required a large temporary workforce comprised of both local and non-local workers. The Project workforce includes individuals from other parts of Manitoba, Canada and other countries, with diverse cultures, perspectives and experiences. A Harassment and Discrimination Free Standard was implemented at the Project site. The Standard describes a strong vision for a workplace free from discrimination and harassment and emphasizes the importance of being respectful of different cultures. Achieving this goal is the responsibility of everyone involved in the Project.

In the fall of 2016, in response to concerns raised by the partner First Nations and their members working on site, a consultant was contracted by the KHLP to independently review the Project site's workplace culture. The independent Keeyask Workplace Culture Assessment (KWCA) confirmed that discrimination and harassment exist at the Project site and emphasized that all parties need to implement measures to create a more respectful, positive work environment. The KWCA included 64 recommendations aimed towards improving workplace culture at the Project site and to reduce incidents of discrimination and harassment. All of these recommendations have now been reviewed and addressed.

Efforts to foster a positive workplace environment at the Project site are continuous and ongoing, and did not stop with completion of the KWCA. Manitoba Hydro and the partner First Nations are continuing to work together at many levels to develop strategies to drive a positive work environment at the Project site. Forums where this work is occurring include:

- The KHLP Board;
- An Issues Sub-Committee of the Board: a committee with representation from the partner First Nations and Manitoba Hydro. The mandate of this committee is to discuss and take action on concerns raised by the partner First Nations

regarding drugs and alcohol and harassment and discrimination;

- The Keeyask Project Diversity and Inclusion Committee: a site-based committee with representation from the KCN Site Reps, site contractors, ERS and Labour Relations. The mandate of this committee is to develop a Diversity and Inclusion Strategy for the Project. The committee also reviews past investigations involving complaints of harassment and discrimination, violence in the workplace, personal conduct cases, and any other significant events, to identify trends that could be addressed through diversity and inclusion initiatives and actions; and



Contact information tent cards at the Project site

- A Harassment and Discrimination Free Workplace Implementation Task Force (HDFWIT): an advisory group to the Site Support Manager with representation from the partner First Nations, Manitoba Hydro, the Allied Hydro Council and ERS. The HDFWIT's mandate is to understand and make recommendations on the investigation process and course of action for workplace complaints under the Harassment and Discrimination Free Standard. This includes the process for receiving, investigating and taking action on workplace complaints under the Standard.

Efforts over this past year have focused on site policies and processes, and ensuring that they are applied consistently and in a timely manner. The HDFWIT did an extensive review of the process for receiving complaints under the Harassment and Discrimination Free Standard, and how the investigation and follow-up processes occur. The review resulted in actions to increase communication and transparency for individuals filing complaints under the Standard, and to heal relationships after a complaint is investigated.

On-site training for conflict resolution and workplace investigations is being provided to front line supervisors and others. A Respect Campaign is ongoing at site. The Diversity and Inclusion Committee developed monthly initiatives on site to honour and promote an inclusive workplace, including activities around Orange Shirt (residential schools) Day, Stop Hunger Day, cultural diversity, and Pink Shirt (anti-bullying) Day. Efforts and initiatives that promote a respectful workplace culture at the Project site will continue throughout construction.



The Respect campaign started in 2017 and was created to signal to anyone that harassment and discrimination are not acceptable at Keeyask. The goal was to create a highly visible campaign to encourage people to work together and focus on similarities, rather than differences. Across Keeyask site, the campaign features posters, videos and branded merchandise individuals can wear to support and spread the message of Respect.

Construction

The Keeyask Infrastructure Project began in 2012 and was completed in 2014. It included construction of the North Access Road, the Start-up Camp and the first phase of construction of the Main Camp.

The Keeyask Transmission Project will be wholly owned and operated by Manitoba Hydro and includes construction power, four unit transmission lines connecting to a new switching station, three generation outlet transmission lines, and upgrades to the Radisson Converter Station. Construction commenced in 2014 and will be complete in time to transfer the power generated at Keeyask into Manitoba Hydro's system.

The Keeyask Generation Project commenced in 2014 and includes the construction of a 695-megawatt (MW) generating station with seven turbine units, a spillway, dams and dykes to contain the reservoir, the South Access Road, phase II of the Main Camp, and clearing of the future reservoir.

As a result of the strong performance during 2018-19, the cost of the Project is on-track to meet the \$8.7 billion budget. The first unit is likely going to be in-service by October 2020, which is a full 10 months ahead of schedule.



Powerhouse in March 2019

Keeyask Generation Project

2018-19 was a successful year of construction on the Project. More than 115,000 m³ of concrete was placed on the Powerhouse, Intake and Tailrace between April 1, 2018 and March 31, 2019. The amount of concrete placed significantly improved from previous years and the concrete work was more complicated. The concrete pours were generally smaller, required more formwork and included more concrete work higher off the ground. More than 86 per cent of the concrete required for the Project has been placed to date.

Over 3.7 million m³ of material (rock, sand and clay) for the earth structures was also placed between April 1, 2018 and March 31, 2019. This was primarily for construction of the North Dam, Central Dam, South Dyke and the cofferdams required for the construction the South Dam.



Spillway Cofferdam removal in July 2018

The Spillway gates, guides and hoists were put into service for the first time over the summer of 2018 allowing for part of the Nelson River to flow through the Spillway. The rock groins for the South Dam Cofferdam were constructed in August which made the entire river flow through the Spillway. River diversion through the Spillway was an important construction milestone and a significant event for the partner First Nations. On August 31, a ceremony was held at the Project site to acknowledge the permanent changes to the river. Held on the south shore of the river within sight of the Spillway, the event honoured both Christian and Traditional beliefs by including scripture readings and gospel singers, a pipe ceremony and water ceremony, and a feast for over two hundred people. Members of the partner First Nations were in attendance alongside members of the Manitoba Hydro Electric Board, Manitoba Hydro executive, and Project staff.

The Turbine and Generator Contractor mobilized to site in early January 2018 and has since installed the draft tube liners on five units and stay rings on three units. These components are known as “embedded parts” as they are embedded in concrete and are required before the rotating parts can be installed, which will occur later in 2019.

In addition to significant progress on concrete and earthworks, all 2018 milestones were met or exceeded.



River Diversion Ceremony site in August 2018

Key milestones achieved in 2018 include:

- Completion of the Spillway, river diversion and opening/operation of the Spillway in August 2018;
- Opening of the South Access Road to construction traffic;
- Installation of the embedded Turbine and Generator (T and G) components for units 1, 2 and 3; and
- Enclosure of units 4 and 5 to allow for the installation of embedded T and G components over the spring of 2019.

Entering the 2018 construction season, in order to meet the budget of \$8.7 billion, the Project required at least a 10 per cent improvement in the performance of the General Civil Works Contractor over what was achieved in the previous years and no major risks to occur that would delay the project schedule. As a result of the strong performance in 2018-19, the first unit in-service date is now expected to be October 2020, which is a 10 months ahead of the control schedule. Advancing the schedule has helped to lower the forecasted Project costs. The Project is now on-track to meet its budget of \$8.7 billion. Even with these advances, the Project team is committed to find ways to lower costs as there is still a lot of work remaining.

The 2019 construction season will be the final major construction season for concrete and earthworks activities on the Project. The 2019 construction season will see work shifting from concrete and earthworks to installation of the mechanical and electrical systems inside the generating station.

Progress on the Project is supported by the essential site services provided by the partner First Nations business ventures, which provide security, ERS, Emergency Medical Services, camp operations services and camp maintenance.



Workers completing a concrete placement



Installation of the stay ring in May 2018



Central Dam (foreground) and Spillway (background) under construction



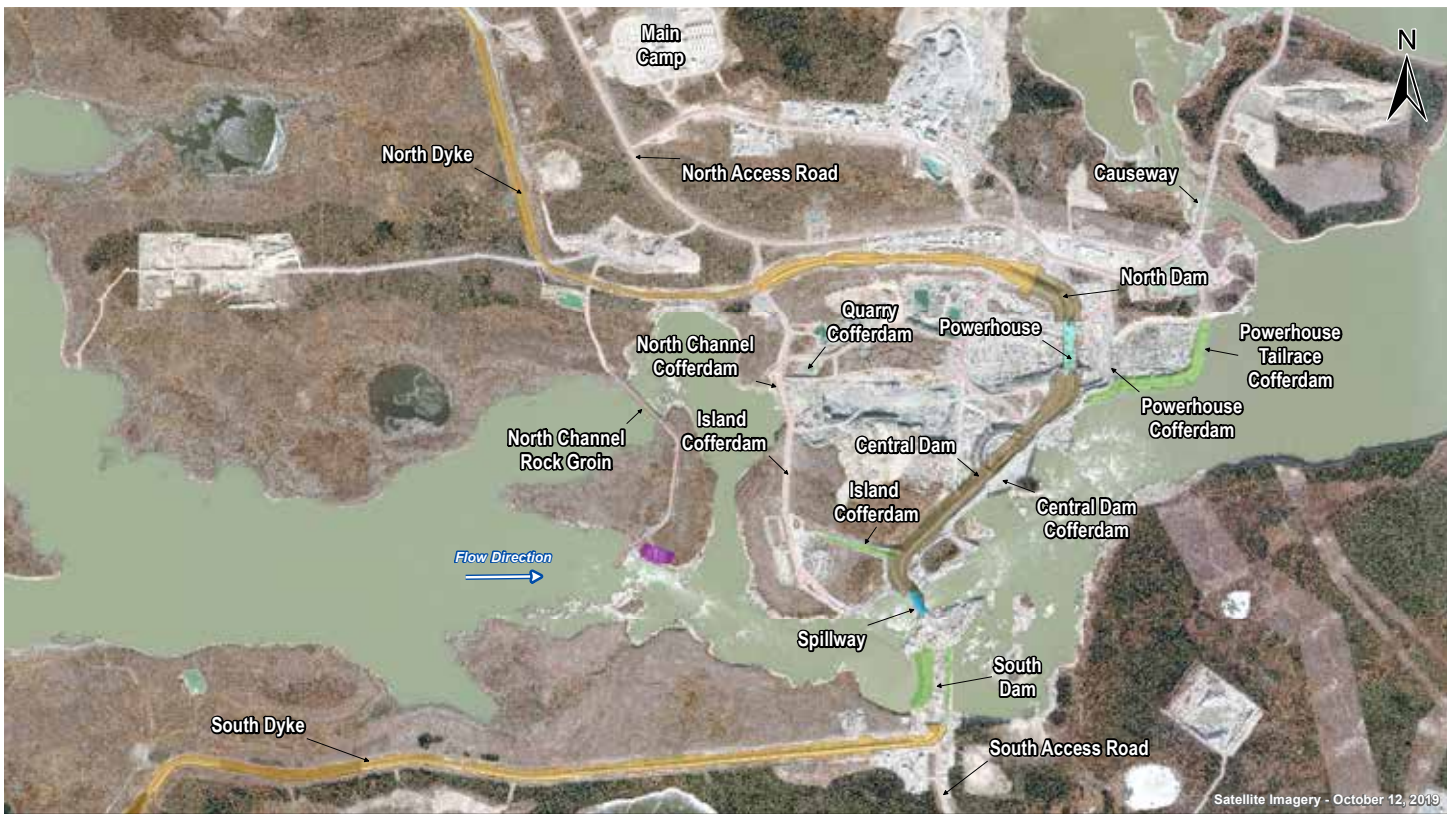
Before and after photos show the Spillway pre and post River Diversion. Top: May 2018, bottom: August 2018



Sodexo staff from left to right: Jenna Keeper (TCN), Kris Beardy (YFFN), Dion Desmet



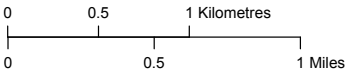
Northern Maintenance Services (NMS) drivers from left to right: Patrick Connell (TCN), Steven Kirkness (TCN), Adam Spence (WLFN), Adam Cook (TCN), Charlie Cooper (OCN)



Infrastructure Completed

July 16, 2014 to March 31st, 2019

Legend	
■	Cofferdam
■	Dam
■	Dyke
■	Haul & Site Road
■	Constructed Gull Nesting Habitat



Safety

Manitoba Hydro and the on-site contractors aim to continually improve safety performance to achieve our goal of “zero hurts”. This means doing everything possible to manage hazards, reduce risks and ensure every contractor and employee is committed to safety.

Over the last year, initiatives to improve safety performance on the Project included:

- Inclusion of a Prevention Team within the Manitoba Hydro onsite safety team to help identify safety indicators before they happen;
- Increased safety-related communications to workers on site, including communicating lessons learned, safety moments highlighting specific situations with the potential to lead to an incident, preliminary incident investigations, and incident investigation summaries;
- Observation cards that all workers can use to anonymously raise safety-related concerns, identify hazards, make suggestions or identify positive behaviours; and
- Further enhancements to the Drug and Alcohol Standard including introduction of a marijuana education program and refinements to the post-incident testing process.

Between April 1, 2018 and March 31, 2019 there were 7.5 million person hours worked at the Project site, nearly one million hours more than the previous year. During this time there were 20 per cent fewer safety incidents than in the previous year.



Keeyask Emergency Medical Joint Venture from left to right: Dion Anderson, Brad Billson, Veniamin Patskan, Dorothy Fehr



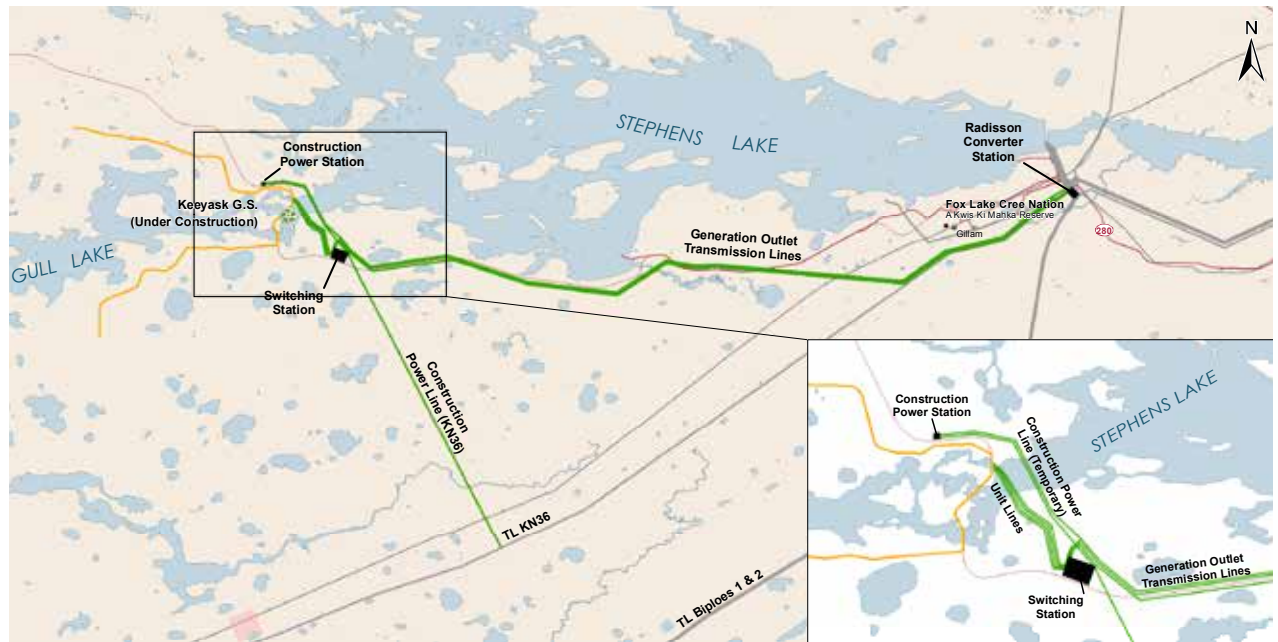
Brandon Fenner, BBE Electrical Apprentice installing embedded grounding

Keeyask Transmission Project

The Keeyask Transmission Project is being built at the same time as the Keeyask Generating Station. When the Keeyask Generating Station is operational, the Transmission Project will link the power produced at Keeyask to the Manitoba Hydro system. The Transmission Project is owned and managed by Manitoba Hydro and its construction costs were funded by the KHLP which required this connection to transport the energy it produced to market. The main components of this project include: construction power, four unit transmission lines that transfer power from the units to a new switching station, three Generation Outlet Transmission Lines, and upgrades to the Radisson Converter Station in order to prepare the station for the power produced by the Keeyask Generating Station.

The progress achieved on the Keeyask Transmission Project in 2018-19 include:

- **Transmission Lines** - Construction of the transmission lines between the Keeyask Switching Station and the Radisson Converter Station are complete. The lines between the switching station and the generating station are almost complete, with the remaining work scheduled for winter 2019/20.
- **Keeyask Switching Station** - The switching station construction is mostly complete. Energization of the switching station will be done in the upcoming year once the transmission lines are terminated and communications installed.
- **Radisson Converter Station Upgrades** - Upgrade work at the Radisson Converter Station continued with the replacement of electrical equipment and other work required to accept power from the Keeyask Generating Station when it is complete.



**Keeyask
Transmission Project**

Legend

- Transmission Line (Under Construction)
- Transmission Station (Under Construction)
- Transmission Line (Existing)
- Keeyask Principal Structures

0 4.5 9 Kilometres
0 4 8 Miles

Employment and Business Opportunities

Keeyask is influencing the Manitoba economy by providing employment (creating labour income) and through the purchase of goods and services required to build the Project. In turn, these expenditures result in incremental provincial tax revenues and contributions to the provincial gross domestic product. The following sections discuss the major direct economic impacts of the Keeyask Generation Project from the beginning of construction in July 2014 to March 31, 2019.



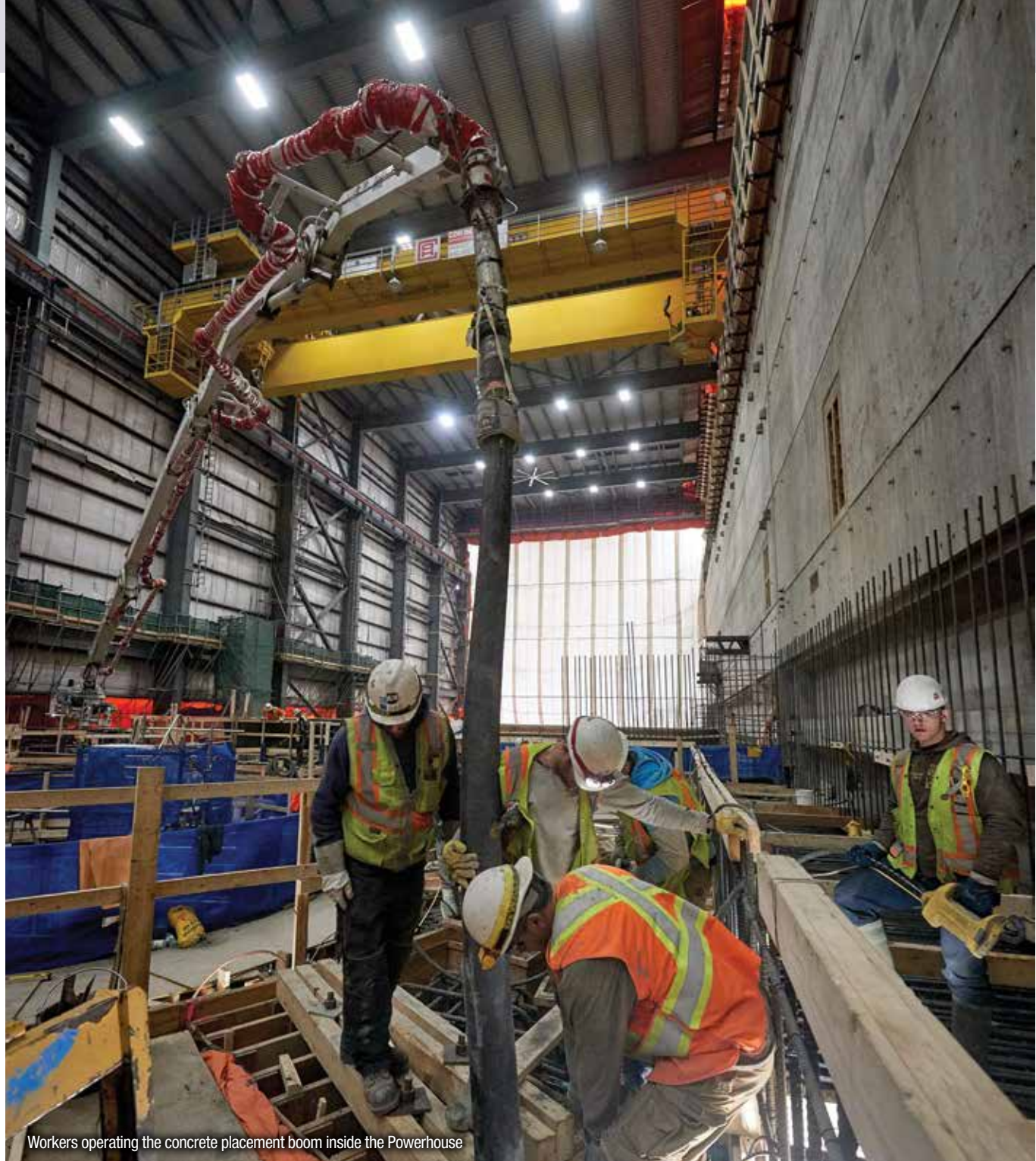
Employment

Employment statistics are tracked to determine the overall employment outcomes of Project construction, with particular emphasis on Indigenous and northern resident participation. Employment is being measured in a few ways, including hires, employees and person years.

Hires refer to the number of people hired for any amount of time at the Project site. One individual may be hired more than once and each hire is recorded separately. When part-time and/or seasonal workers are hired, it is useful to standardize the hires in terms of person-years of employment (one full time position for one year).

In most industries, this usually means about 2,000 hours of work per year using a standard 40 hour work week. At Keeyask, a person-year of employment represents 3,000 hours of work per year.

The person-years of employment presented in this section, are shown both at 2,000 hours of work per year, for economic comparisons to other industries, as well as at 3,000 hours (identified in parentheses) of work per year.



Workers operating the concrete placement boom inside the Powerhouse

Person-years of Employment

From the start of Keeyask Generation Project construction to March 31, 2019, direct employment on the Project totaled 11,347 (7,565) person-years. As the figure below illustrates, 61 per cent, or 6,916 (4,611) of these person-years, represent people already living in Manitoba.

Of the 61 per cent of employees already living in Manitoba:

- Northern Manitobans represent 39 per cent, or, 2,652 (1,768) person-years;
- Other Manitobans represent 62 per cent, or 4,264 (2,843) person-years;
- Indigenous employment represents 51 per cent, or 3,503 (2,335) person years; and
- Non-Indigenous employment represents 49 per cent, or 3,413 (2,275) person-years of the Manitoban employment.

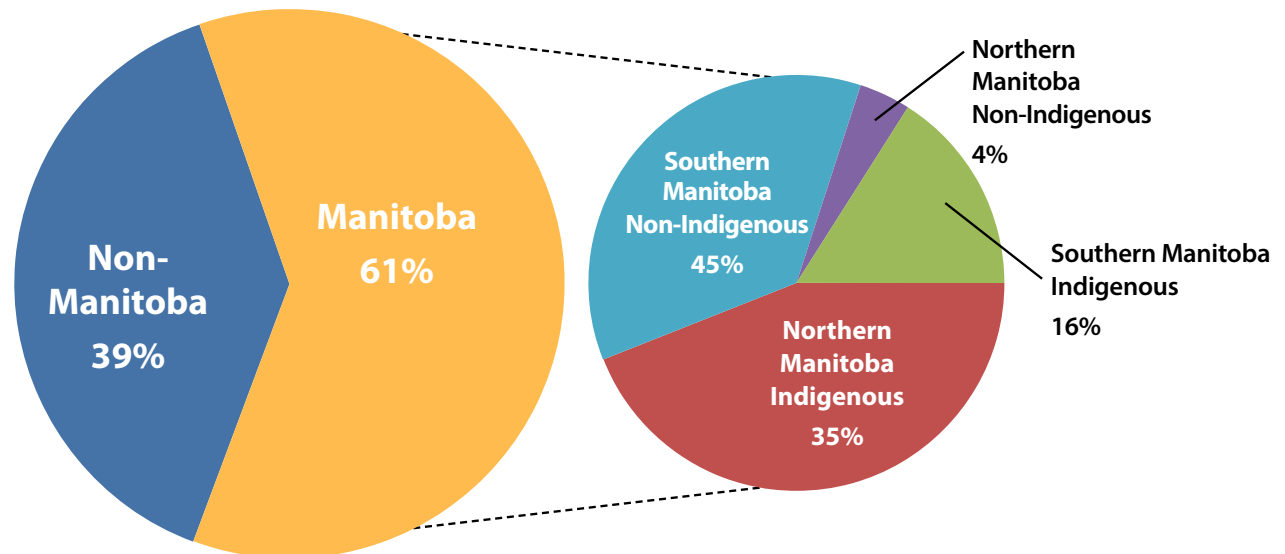


BBE workers from left to right: Andy Willis, Ian Faulkner, Jean LeBlanc, Mark Church, Rose Connell (TCN), Bradley Doyle



From left to right: Lenard Genaille, metal fab shop apprentice, Emil Honke, metal fab shop mentor

Total Person Years of Employment Breakdown



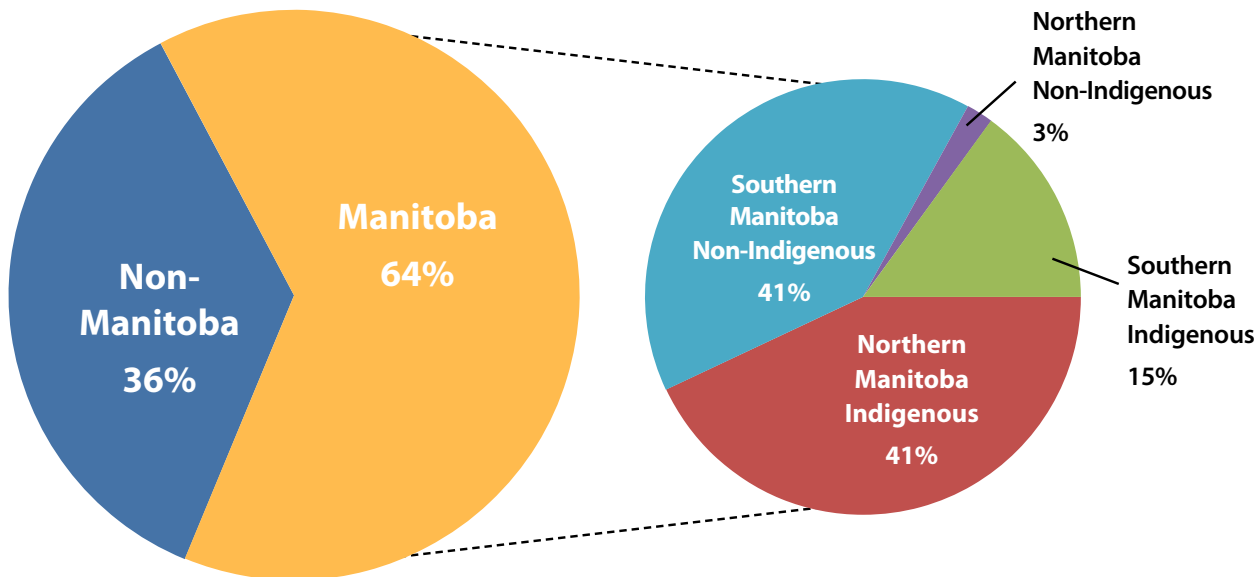


Sodexo staff Simeon Spence (FLCN)



Bill Pronteau (YFFN) - BBE worker

Breakdown of Hires



Hires

From the start of Keeyask Generation Project construction to March 31, 2019, there were 19,260 hires on the work site.

Of the total hires, 12,409 or approximately 64 per cent were Manitobans.

- Total northern Manitoban hires represent 44 per cent (5,425) of Manitoba hires;
- Indigenous hires represent 56 per cent (6,920) of Manitoba hires; and
- Non-Indigenous hires represent approximately 44 per cent (5,489) of Manitoba hires.

Total Hires by Job Classification	Total Hires	Percent of Total Hires	CBN ¹	Indigenous	Non-Indigenous	Northern MB	Other MB	Non-MB
Labourers	3271	17%	920	1726	1545	1312	1282	677
Security Guards	185	<1%	15	66	119	44	141	<5 ²
Crane Operators	359	2%	8	49	310	21	212	126
Equipment Operators	1688	9%	237	541	1147	383	648	657
Teamsters	1542	8%	351	742	800	531	663	348
Carpenters	3380	18%	113	696	2684	302	694	2384
Millwrights	79	<1%	<5	9	70	<5	72	<5
Painters	25	<1%	<5	7	18	<5	17	7
Glass Workers	2	<1%	<5	<5	<5	<5	<5	<5
Floor Covering Installers	9	<1%	<5	<5	9	<5	8	<5
Insulator Workers	100	<1%	<5	23	77	<5	86	12
Lathing and Drywall Workers	46	<1%	<5	8	38	<5	18	27
Cement Masons	340	2%	<5	43	297	6	112	222
Bricklayers	24	1%	<5	<5	22	<5	24	<5
Sheet Metal Workers	24	<1%	<5	5	19	<5	21	<5
Roofers	35	<1%	<5	5	30	<5	32	<5
Sheeters, Deckers and Cladders	69	<1%	<5	13	56	<5	47	20
Boilermakers	38	<1%	<5	<5	35	<5	35	<5
Iron Workers	1016	5%	19	261	755	62	437	517
Rod person	273	1%	<5	46	227	<5	39	231
Electrical Workers	441	2%	46	114	327	90	328	23
Plumbers and Pipefitters	349	2%	21	81	268	33	274	42
Refrigeration Workers	32	<1%	<5	15	17	<5	22	7
Sprinkler System Installers	6	<1%	<5	<5	5	<5	6	<5
Office and Professional Employees	1477	8%	199	521	956	348	786	343
Caterers	2212	11%	1497	2140	72	2081	88	43
Elevator Constructors	9	<1%	<5	<5	9	<5	9	<5
Other ³	2229	12%	130	312	1917	194	881	1154
Total Hires	19260	100%	3565	7429	11831	5425	6984	6851

Individual Employees

From the start of Keeyask Generation Project construction to March 31, 2019, a total of 9,598 individual employees were hired. Of this, 58 per cent (5,581 individual employee hires) were Manitobans.

- Total northern Manitoban employees represent 41 per cent (2,294) of Manitoba hires;
- Indigenous employees represent 53 per cent (2,946) of Manitoba employees; and
- Non-Indigenous employees represent approximately 47 per cent (2,635) of Manitoba employees.

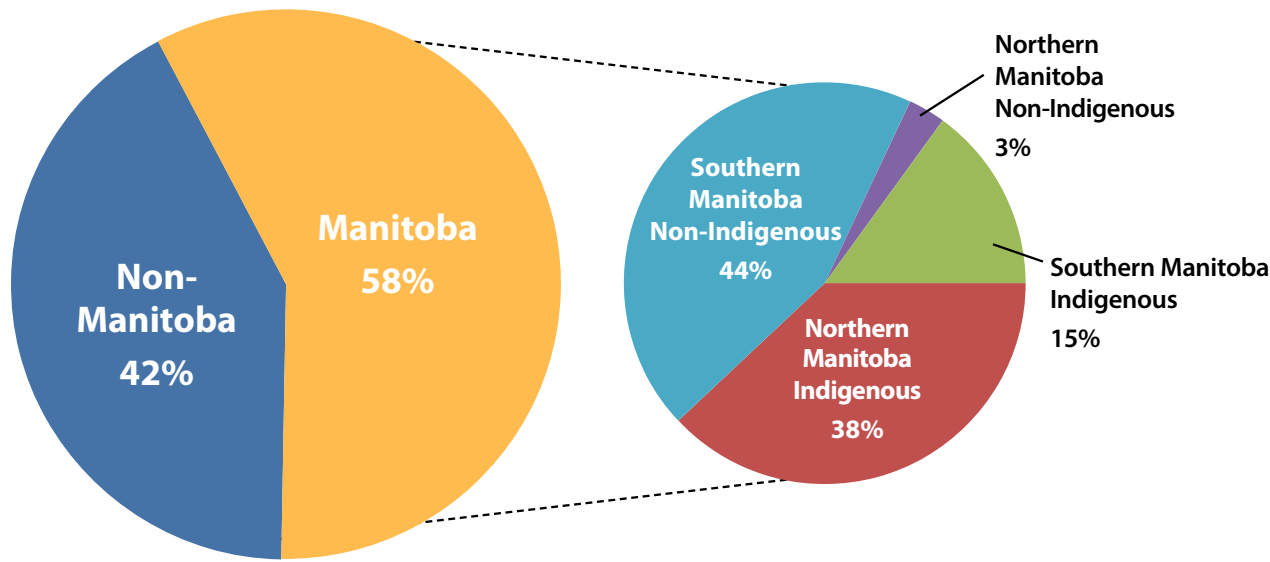
The total number of employees is less than the total number of hires (19,260) because the same individual may have been hired more than once. For example, an individual may have moved to work on a different contract or moved to a different job classification to improve their position. The difference of 9,662 identifies the number of re-hires at the Project site.

¹ CBN stands for Churchill-Burntwood-Nelson communities identified in the Burntwood Nelson Agreement as part of the hiring preference Zone 1

² For employee privacy and confidentiality reasons, categories with less than five hires are shown as <5

³ The "Other" category refers to hires in job classifications not covered by the Burntwood Nelson Agreement, i.e. "out of scope" positions. This would include managerial and supervisory staff (both Contractor and Manitoba Hydro).

Breakdown of Employees



On-the-Job Training Opportunities

On-the-Job Training (OJT) programs were developed at site to hire individuals as trainees and apprentices to enhance their qualifications for further career development. The programs offered during the last year were in the following areas:

- Catering, janitorial services and housekeeping;
- Maintenance services;
- Emergency medical and ambulance services;
- General civil contract; and
- Spillway and intake gates, guides and hoists.

As of March 31, 2019, 1,738 Indigenous employees had participated in training opportunities on the Project (301 were in OJT programs); 614 of these were filled by partner First Nations' members (174 were in OJT programs). Apprenticeship opportunities were available in trade classifications such as Mobile Crane Operators, Mechanics, Carpenters, Millwrights, Iron Workers, Plumbers and Pipefitters, Cement Masons, Electricians, Refrigeration Workers, Dozer Operator, Loader and Rock Truck Drivers, Fitness Leaders, Hospitality Management and Red Seal Chefs.

In addition to the Project's OJT programs, Manitoba Hydro also hosted partner First Nations summer students at the Project site which has been done annually for the last three seasons. In the summer of 2018, there were two groups of students at site for two weeks each which included four students from TCN

in the first week and three students (one from TCN and two from YFFN) in the second week. The students worked with Manitoba Hydro groups including Environmental, Camp Operations, Earthworks and Excavations, Mechanical/Electrical and Surveys.

Rate of Turnover

The cumulative rate of turnover is calculated as total incidents of separation, for discharges and resignations, divided by hires¹ from the start of construction to a given point in time. The cumulative rate of turnover does not include layoffs or transfers to other positions or contracts.

From the start of Keeyask Generation Project construction to March 31, 2019, the cumulative turnover rate for the Project is 32 per cent for total hires, 44 per cent for Indigenous hires and 24 per cent for non-Indigenous hires.

¹ Hires for calculating turnover was modified to exclude Contract 016125 (Emergency Medical Services), Contract 16180 (Nurse Practitioners) and all environmental monitoring contracts as hiring and work scheduling practices for these contracts can misrepresent the true turnover rate.



Karen Thomas (YFFN) - OJT, BBE Carpenter Apprentice

Business Opportunities

Project construction presents direct and indirect business opportunities locally, regionally and across the Province as a whole. Business outcomes of Project construction are being tracked, with a particular focus on Indigenous and northern Manitoba business participation.

Direct impacts result from Project expenditures and include employment, purchases, and income generated by the Project. 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 are indirect impacts on businesses supplying materials and equipment to companies in the direct impact segment.



Sodexo workers: Mary Pruden (TCN), Catherine Cook (TCN), Margaret Beardy (YFFN), Betty Connell (TCN), Mary Ann Ferguson (TCN)



Ernest Massan (FLCN), NMS, Journeyman Carpenter, Michael Spence (TCN), NMS, Carpenter Apprentice Level 1



Sodexo staff Tanya Botelho (FLCN)



NMS workers Keven Lee, Bryan Adcock, Brad Zubert, Dwayne Houston, Jeremy Thibeault (TCN)

Direct Negotiated Contracts

As of the end of March 2019, 19 Direct Negotiated Contracts (DNCs) for the Keeyask Project had been awarded to the partner First Nations, with a total value of exceeding \$700 million. DNCs awarded to partner First Nations included work undertaken on the following components of the Project:

Services (throughout Infrastructure and Generation projects)

- Catering and janitorial services;
- Security services;
- Camp maintenance services;
- Employee Retention and Support Services; and
- Emergency medical services.

Supporting Infrastructure

- PR 280;
- North Access Road (Part A and B);
- Start-up camp and work areas site preparation;
- Looking Back Creek bridge; and
- Work areas site development.

Generation Station

- Southside containment dykes;
- South Access Road;
- Reservoir clearing;
- Upstream and downstream boat launches;
- Reservoir spawning shoals; and
- Ellis Esker Winter Trail.

In addition, four DNCs were awarded to TCN for the Keeyask Transmission Project with a total value exceeding \$80 million. DNCs have also been highly successful in providing significant employment opportunities for members of the partner First Nations.

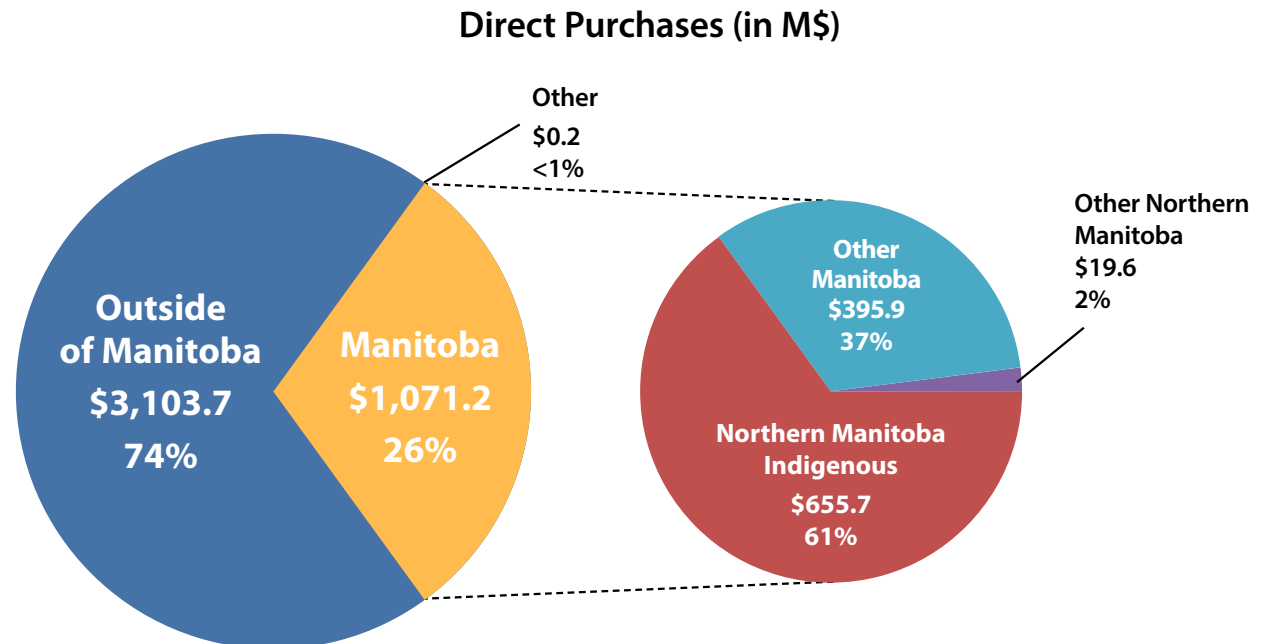
Indirect and Induced Business Opportunities

A key person interview program was completed in 2018 to understand the indirect and induced business opportunities generated as a result of Project-related expenditures in Thompson and Gillam. The results from the Thompson interviews suggest that the Project has had a generally positive impact on the Thompson business community. The results from the Gillam interviews suggest generally positive impacts or a neutral perspective on the Project. The majority of businesses positively impacted by the Project attributed the benefits

to spending by project contractors and, to a lesser degree, spending by construction workers and their families. Minimal impacts on the availability of qualified workers were observed. Interviews in the partner First Nations communities have begun and are anticipated to be completed in 2019.

Project Purchases

There was \$4,175.1 million spent on goods and services for the Project. Of this, \$1,071.1 million were Manitoba purchases. Total northern Manitoba (Indigenous and non-Indigenous) purchases represent \$675.3 million or 63 per cent of the total Manitoba purchases. This information reflects direct purchases of the Project for contractors and services. Indirect purchases made by contractors, in turn, would include purchases of goods and services from Manitoba based businesses.



Income

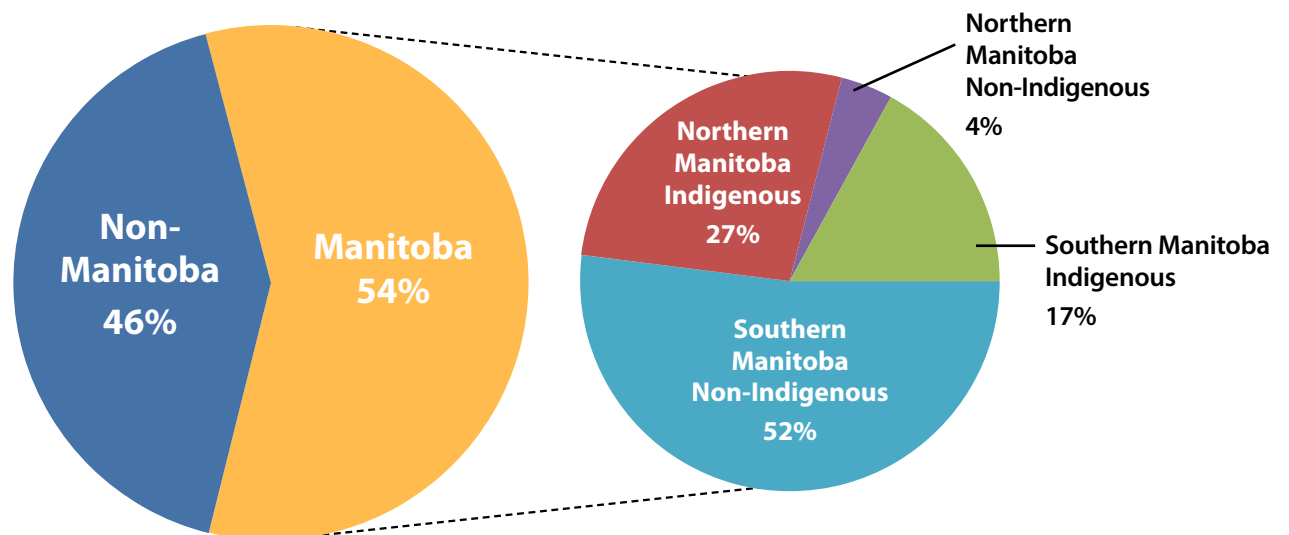
Project construction generated income from a number of sources including employment, business opportunities and payment of taxes. Partner First Nations income has originated mainly from employment and to a lesser extent from business opportunities resulting from construction. During the operation phase, the partner First Nations will receive equity income as a result of being partners in the Project.

Labour income is an important indicator of the economic impact of a project. It is the sum of wages and salaries earned by workers.

The Project, from July 2014 to March 2019, generated \$1,176.1 million in total labour income. Of this, Manitoba labour income represented \$639.6 million or approximately 54 per cent of total labour income. Of total Manitoba labour income, Indigenous labour income represented approximately \$282.5 million (44 per cent); northern Manitoba Indigenous labour income represented approximately \$173.2 million (27 per cent); northern Manitoba non-Indigenous labour income represented approximately \$25.3 million (4 per cent); and non-Indigenous labour income represented \$357.1 million (56 per cent). Partner First Nations labour income represented approximately \$96.4 million (13 per cent) of total Manitoba labour income.



Total Project Labour Income Breakdown



People and the Environment

Before obtaining a Manitoba Environment Act licence and a federal Fisheries Act authorization to construct the Project in 2014, many years of study were conducted to understand the conditions in the Keeyask area. Both ATK and technical science were used during the assessment. Predictions were made of the effects that the Project would have on people and the environment, and mitigation plans were developed to reduce impacts where possible.

Now, during construction of the Project, ATK and technical science monitoring are being used to follow up on the predictions and assess the effectiveness of mitigation measures. There are only a few years left to complete construction of the Project and the planned mitigation measures are being carried out. A substantial amount of monitoring has been undertaken over the last five years to understand the effects of construction.



FLCN youth participate in ATK activities in January 2019

Aboriginal Traditional Knowledge (ATK)

Tataskweyak Cree Nation (TCN)

ATK is described in the Cree Nation Partners' Environmental Evaluation report for Keeyask as "knowledge that reflects our experience, understanding, wisdom, values and duties of everyday life and priorities governing our relationship with Mother Earth and all her beings, derived and developed through living in our homeland ecosystem since time immemorial. ATK is inexplicably linked to our culture and our worldview."

The Tataskweyak Aboriginal Traditional Knowledge monitoring program was put together to monitor the effects of the Project.

Some of the key activities carried out from the monitoring program include:

Sturgeon Release

Students and Elders participated in the spring sturgeon yearling release on June 7 at the Orr Creek on the Burntwood River. Grand Rapids Fish Hatchery staff explained the timing of the spawn, how eggs are collected and fertilized, and how the hatchery operates. Elders observed and shared their own knowledge and stories with students during the release.

Elder Engagement and Community Workshops

ATK monitors held community workshops with Elders to learn traditional knowledge and teachings to help identify what activities to include in the ATK program. These meetings/workshops also helped to develop a greater understanding of the Project effects on both the physical and spiritual aspects of our traditional knowledge and lifestyle and to educate and strengthen the connection we have with both. It is important for youth to learn about ATK. Elders participate in school cultural activities to help children learn about traditional lifestyles (e.g. they learned the process required to develop a hide). Preserving and transferring the Cree language through traditional activities to community members and youth is a priority.

Aquatic Monitoring Studies

TCN is monitoring beyond the Project footprint to look at the whole Resource Management Area (seven per cent of Manitoba) using traditional methods. TCN members have observed a lack of migratory birds in the immediate vicinity of Split Lake. Shoreline birds are gone and migration patterns have changed. Staff will continue to monitor and observe the continuing changes. Aquatic water monitoring studies looking at off-setting lakes are being planned.



Sturgeon yearling release on June 7, 2018

Caribou Monitoring

Caribou are migratory and return to this area in winter. Small groups move across the lake and we observe their tracks to estimate herd numbers and the direction of travel. For First Nations people caribou are a vital source of traditional food, clothing, and other uses related to living in the northern climate.

Caribou movement through the Project area was closely monitored in the Tataskweyak area. Caribou numbers show an increase of hunters and resource users coming in from different communities. This raised concern for hunter's safety as well as ensuring they carried out a respectful harvest.

Archaeological Monitoring

Water levels were low in 2018 and provided excellent opportunities for the ATK staff and others to examine the exposed shorelines for cultural materials. During the surveys, human remains of a child were found eroding from a bank at Split Lake 171A. At the request of TCN, these remains were radio carbon dated to be approximate 300 years old. In addition, evidence of an early fur trade post were recovered including beads, Hudson Bay Company tools, and hand wrought nails. ATK staff coordinated the collection of artifacts which are now housed in the TCN Stewardship Centre.

ATK staff accompanied the Project archaeologists on the monitoring and mitigation of sites in June to July. During the six-day trip, ATK staff visited ten previously recorded sites and discovered a new one. During the investigations at a known site, human remains were discovered. These skeletal elements were consistent with the Gull Lake Ancestor, whose partial remains were found in 2010.



ATK staff and members of FLCN's environmental team assisted the Project archaeologists and a representative of Manitoba's Historic Resource Branch with the recovery of the approximately 4000 year-old Ancestor. During the investigation, ATK staff learned the importance of recording archaeological evidence and preserving the past.



Mercury and Human Health

The Mercury and Human Health Implementation Group is involved with developing and delivering mercury and human health related activities such as information sessions and hair sampling and food survey events in partner First Nations communities.

The community of TCN offered information sessions and a hair sampling/ food survey event. These sessions helped to inform the community about the Project and mercury with respect to the consumption of fish and other wild foods. The hair sampling/ food survey event promoted a “Know Your Number” campaign to encourage members to get their hair tested for mercury. This will help members make informed decisions about the size, amount and type of fish they eat on a regular basis.

Future community based mercury-related activities include information sessions, voluntary hair sampling and food survey, and voluntary sampling for mercury in traditional foods (wildlife and plants). The TCN team is also working on a fish sampling program for the offsetting lakes. Voluntary sampling is designed to collect samples from wildlife, fish or plants that are intended for consumption purposes and not for the sake of obtaining mercury samples.



Elders sharing knowledge at a community meeting



Caribou winter survey



Heritage artifacts found during archaeological monitoring



Shoreline bird monitoring at Gull Lake

York Factory First Nation - Askiy Nanakacihtakewin (AN) Stewardship Program

Program Overview

Askiy Nanakacihtakewin means, “to watch out for and take care of the lands, waters, wildlife, plants, and people of the land”. YFFN has chosen the term “stewardship” for its “monitoring” program, as this word is better aligned with Ininiw perspectives on caring for Askiy. The program is designed to incorporate traditional science and Ininiw kiskenihtamowin (ATK), with cultural, educational, and traditional elements in understanding the effects of the Project on YFFN’s members and their traditional lands.

The 2018-2019 year was marked by the sudden passing on of the program’s Stewardship Coordinator, late Roy Redhead, in September 2018. Roy was a driving force behind the vision and work of the Askiy Nanakacihtakewin program, and is dearly missed.

On December 4, 2018, Darcy Wastesicoot started as the new Coordinator of YFFN’s Askiy Nanakacihtakewin monitoring program. He is working with the Stewardship Assistant, Monitoring Support Worker and program Steering Committee to carry this important work forward in Roy’s absence.

Steering Committee

The Askiy Nanakacihtakewin Steering Committee, is a group of Elders, resource users, Resource Management Board members, Band and Implementation staff who offer guidance to the program and ensure linkages with other First Nation programs and activities.



Darcy Wastesicoot, Stewardship Coordinator, discussing use of atikok (caribou) leg bone

Keeyask Committees and Working Groups

Program staff represent YFFN on a number of Project committees and working groups. Each of these groups acts as a forum to share community perspectives and work for better inclusion of Ininiw knowledge and values on the Project.

- Keeyask Monitoring Advisory Committee (MAC)
- Keeyask Caribou Coordinating Committee (KCCC)
- Construction Advisory Committee (CAC)
- YFFN Steering Group for the Keeyask Socio-Economic Monitoring Program (SEMP)

The new Stewardship Coordinator also sits on the Wapusk Management Board and Kischi Sipi Namao Committee. Connections to these tables will help to tie the program’s work to broader management efforts on YFFN’s traditional lands.

Key Activities

Several of the program’s key events of 2018-2019 are as follows:

Work Planning

A contribution agreement to fund the Askiy Nanakacihtakewin program was negotiated and signed in the spring of 2018. The agreement funds program activities from June 2018 to May 2020.

Caribou Mapping

For several years, YFFN's AN program has been mapping caribou observations with YFFN resource users to create a record of what they are seeing on the land over the course of the winter. This mapping work continued in the spring of 2018 to understand caribou movements in the winter of 2017-2018. A similar mapping exercise was carried out in War Lake First Nation this year and results are being shared within the Partnership.

Waterways Tour

In August 2018, program staff worked with Manitoba Hydro's Waterways Management Program to arrange a boat tour from York Landing to the Kelsey Generating Station. The tour involved the Askiy Nanakacihhtakewin Stewardship Coordinator, an Elder, a resource user, two youth, and staff from Manitoba Hydro. The group travelled across Split Lake, toured a local resource user's cabin and harvesting area and toured the Kelsey Generating Station. A discussion at the Kelsey Generating Station addressed management of the Hydro system, flooding in 2017, the Augmented Flow Program, Kelsey Re-runnering Project and CR-North programming.



Worker Family Surveys

As part of the SEMP, YFFN researcher, Robben Constant coordinated 35 interviews and a community workshop focused on documenting the experiences of Project workers and their families. YFFN thanks the members who gave their time and shared rich and candid experiences with the research team: Kinanaskomitinawaw.

YFFN has developed a report summarizing the key themes coming out of the YFFN interviews, which is available to YFFN members and leadership.

Steering Committee

We held a Steering Committee meeting January 22, 2019 to update them about Askiy Nanakacihhtakewin activity and to seek direction and feedback on future events and plans. One of the ideas that came out of the meeting, is to emphasize the Cree language and to incorporate it into the monitoring program wherever possible. The Committee also encouraged staff to focus on hands-on and on-the-land activities in their work.

Coordination with Sturgeon Activities

As a result of the Coordinator's role as Chair of the Kischi Sipi Namao Committee (a sturgeon stewardship group for the lower Nelson River), the Askiy Nanakacihhtakewin program was connected to several sturgeon-related activities:

- Presentation at a sturgeon symposium at the University of Manitoba in December 2018
- Participation in a joint meeting of three Manitoba and Saskatchewan sturgeon boards in January 2019

MAC Open House

YFFN hosted a MAC open house in February. The event focused on youth, with hands-on activities related to animals, the land, and environmental monitoring. To add a language element to the event, the Askiy Nanakacihhtakewin program developed buttons with Ininimowin (Cree Language) animal names that were handed out to youth who attended. The buttons were very well received. Following the open house, additional animal names were added and a series of magnets was developed to share with youth at YFFN's Pipon Kapesiwin (see below) and other events.

Pipon Kapesiwin (Winter Camp)

Program staff organized and hosted their second annual Aboriginal Traditional Knowledge Winter Camp in March 2019.

Elders prepared wild food like geese, fish, caribou and rabbits that were donated by community members. Children watched the Elders prepare the wild food and staff and learned how to say the names of animals and birds in Ininimowin (Cree). Staff gave out magnets and buttons with animal names for each of the children to take home to their families. The people who were at the camp helped the children and other people who didn't know the Cree language.

The camp included a traditional feast with bannock and meat prepared by the Elders, a community campfire breakfast, and a Western style feast that was open to the whole community.

"What I observed...was people enjoying themselves and visiting amongst themselves. I haven't seen this kind of people interacting since before technology and Facebook came into our lives. It felt so good to see this and be part of it," said Jimmy Beady, Stewardship Assistant.

Collaboration for Atikok

2017, 2018, and 2019 have seen large numbers of caribou come near the Keeyask Partner communities. The herds have drawn many harvesters from outside the area and raised concern among YFFN and other Partner communities: about the number of animals being harvested; hunters failing to follow traditional protocols for accessing traditional lands; carcasses being left with only small amounts of meat taken; and safety hazards associated with gut piles being left on access routes. These concerns have been discussed at MAC and KCCC meetings.

Steering Committee members urged Askiy Nanakacihkewin staff to find funds to support further collaboration among the communities with respect to monitoring and protecting caribou. They emphasized the importance of communicating with other First Nations in the region beyond those in the Partnership and working together to address their common concerns.

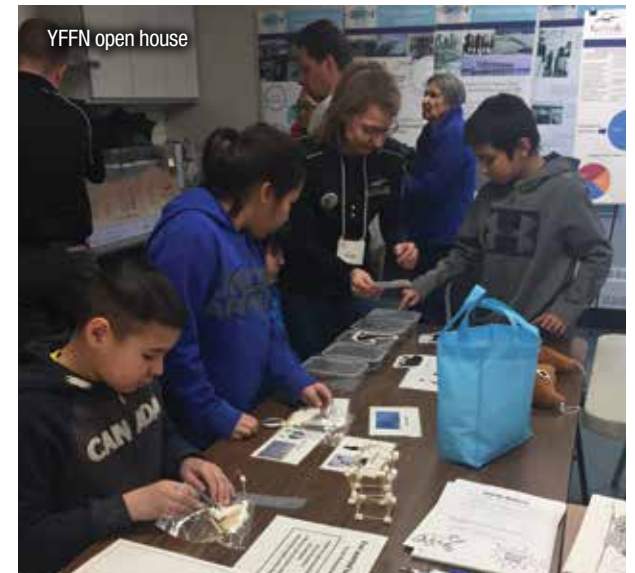
YFFN has secured funds through the Canada Nature Fund for a project titled Collaboration for Atikok. The project involves three multi-party workshops including six First Nations from northeastern Manitoba. This work will allow the Partner communities to build their collaboration on caribou monitoring in the area and expand discussions to include other First Nations that observe and access caribou in the region. The workshops will take place in 2019 and 2020.



Elders cleaning fish at the Pipon Kapesiwin (Winter Camp)



Ininimowin (Cree Language) animal name buttons were handed out to youth at the MAC open house and Pipon Kapesiwin (Winter Camp)



YFFN open house

War Lake First Nation Aboriginal Traditional Knowledge Monitoring Program

The War Lake First Nation Keeyask ATK Monitoring Program is modeled on the definition of Traditional Ecological Knowledge which values the knowledge, beliefs, traditions, practices and worldviews of Indigenous communities about the relationship of living beings with one another and their environment. The program was designed to provide opportunities

for WLFN members, including Elders, resource users, knowledge holders and youth to record, discuss, and communicate observations and perspectives regarding the effects of Keeyask construction and operation on all aspects of their world. This fieldwork research is conducted with the support and guidance of local fieldwork staff and advisors.

Launched in the summer of 2017, the program started with a Site Selection Roundtable for ATK Monitoring Trips and an introductory community meeting. Since that time, WLFN has undertaken three ATK Monitoring Trips and four Resource User Roundtables.

The comprehensive report, War Lake First Nation Aboriginal Traditional Knowledge Monitoring Program Report (November 2017-April 2019), includes individual Monitoring Trip reports and provides a detailed review of all activities, including results and analysis of change.

ATK Monitoring Trips

Seasonal monitoring trips of three to five days are held at a site traditionally used for hunting, trapping and fishing and brings WLFN members, Elders, knowledge holders and youth together “on the land” to observe and discuss changes to the land and waterways. These important outings also present an opportunity for traditional knowledge transfer to younger generations. The first ATK Monitoring Trip to War Lake took place in November 2017.

Monitoring Trip #2 to Atkinson Lake

From July 26 to August 1, 2018, WLFN members including Elders, resource users, knowledge holders, and youth, travelled to Band-owned cabins at Atkinson Lake by float-plane to monitor summer conditions in the area. Atkinson Lake is a culturally important site for WLFN members and is used for hunting, trapping and fishing all year-round.

The group undertook four separate excursions by boat to monitor various conditions on the lake and to undertake some traditional activities, such as fishing. These excursions included visits to important locations, including to the mouth of the Little Fox River, to various beaches on the lake, to “Seagull’s’ Rock” (a nesting area for seagulls located close to the centre of the lake), to the site of a former cabin, and to various overgrown trailheads on the lake. These four excursions allowed the group to monitor a large portion of the lake.



Although the water remains clean with a plentiful supply of fish, the group noted evidence of some spring flooding that is not a usual event on the Atkinson Lake. Other observations made that may relate to the Project included signs of more human traffic from Gillam and the introduction of pelicans, a predatory bird, to the area.

Monitoring Trip #3 to Atkinson Lake

A group comprised of resource users, knowledge holders and youth, returned to Atkinson Lake from March 12 to 15, 2019, to observe seasonal conditions and to monitor the health of fish, with a focus on jackfish and pickerel.

The group travelled to the Band-owned cabins at Atkinson Lake via the winter road. Unfortunately, about half way there, the group encountered a grisly scene. Approximately 15-20 caribou had been slaughtered on the winter road. It was evident that outside hunters had committed the act, as only hindquarters and antlers had been taken as trophies. The remains were widespread and upsetting to the group. According to the resource users in the group, this is becoming a more frequent occurrence in the War Lake Traditional Use Area and is partially attributed to the increased population in the north resulting from the construction of the Project.

During the three days spent at Atkinson Lake, the group focused their activities on winter line-fishing. Over 45 jackfish and pickerel were caught. Most jackfish were returned to the lake to continue growing, while most pickerel were kept and returned to the community for sharing. Fish were reported to be healthy and relatively plentiful. The youth enjoyed learning fishing techniques from experienced resource users and had a chance to practice their skills by setting a fishing net in the ice.



Knowledge Holders Jeff and John Laliberty filleting pickerel

Resource Users Roundtables

This resource users' discussion forum provides opportunities for WLFN members with resource use experience, including Elders, knowledge holders and youth, to share their knowledge of being on the land to hunt, trap and fish. Discussions are held regularly to share experiences and changes observed in areas that extend from the Landing (Aiken) River to Three Sisters Lake to Fox River. These sessions include a mapping component for recording War Lake's site specific ATK. The Program's first two roundtable discussions took place in November 2017 and February 2018. The following Resource Users Roundtables were held in August and November of 2018:

August 21-22, 2018 Roundtable Discussions

The summer Resource Users Roundtable took place August 21-22, 2018, shortly after the ATK Monitoring Trip to Atkinson Lake. Seven resource users including Elders participated in a session that focused on the physical environment, including plants and animals, of the resource use corridor extending from Cyril Lake (to the west) to Fox River (to the east).

Detailed descriptions of the land and waterways in the area were provided by participants as well as an inventory of the many types of animals and plants observed. This corridor is of historical importance and is frequently accessed for all year-round resource harvesting to this day. Changes noted by participants included the introduction of new animals to the area, the shortening of the winter season, and more extreme flood and fire events, which were attributed to climate change.

November 26-27, 2018 Roundtable



War Lake ATK Monitoring Group



WLFN open house

Knowledge Holder Jeff Laliberty caught the largest pickerel



Discussions

The winter Resource Users Roundtable session was influenced by the work being conducted by the Keeyask Caribou Coordination Committee (KCCC) with the discussions focusing on knowledge and experiences related to caribou habitat, movement and harvesting. The session was followed by a day and a half Caribou Mapping Project session where the results were reported to the KCCC. Eight resource users including Elders, youth and the War Lake Chief, Betsy Kennedy, participated.

Participants shared observations and historical examples of the cultural importance and traditional uses of caribou for food sustenance, clothing and bedding. During the discussions about harvesting caribou, much attention was focused on the influx of outsiders accessing the War Lake Traditional Use Area to hunt caribou. They found the wastefulness and disrespect to the animal shown by sport-hunters very upsetting. War Lake is currently considering how to best address this situation.

Next Steps

WLFN activities planned for the upcoming year:

- ATK Monitoring Trip #4 to Landing River (Pickerel Run);
- Summer and Fall Resource Users Roundtables; and
- Community meeting with presentation of Program Report.

War Lake ATK Monitoring Group



Fox Lake Cree Nation

The Fox Lake Cree Nation (FLCN) Impact Assessment Unit (IAU) consists of environment monitors who monitor the Keeyask Project footprint including FLCN's traditional territory and surrounding areas related to the Project. These areas have been monitored since the beginning of construction and will be monitored post construction.

The IAU undertakes the following activities as outlined in the monitoring plan:

- Gathers ATK from FLCN Elders, resource users, harvesters, and youth relating to the land, water, animals, and spirituality. The IAU participates in community gatherings, ceremonies, community information sessions, community impact meetings, home visits with Elders, harvesting activities and school visits. Addresses FLCN member concerns and questions relating to the Project;
- Provides employment opportunities for FLCN members, utilizing their expertise of the land, water, and ATK of FLCN traditional territory/Project footprint;
- Shares information and knowledge gained with FLCN membership via Facebook FLCN page, Fox Lake Environmental page, memos and information sessions – Community Update/MAC open house;
- Obtains resource materials regarding protection and preventative measures from Manitoba Sustainable Development; and
- Works with Manitoba Hydro Environmental Site Inspectors, researchers, and persons related to the Project, and communicates with the Senior Environmental Assessment officer for clarification on updates and relays concerns.



FLCN IAU staff are members of various committees relating to the project including the Monitoring Advisory Committee (MAC), Keeyask Caribou Coordination Committee (KCCC), Kishi Sipi Namao Committee (KSNC), Construction Advisory Committee (CAC) and Mercury and Human Health Implementation Group (MHHIG). They attend regularly scheduled meetings and present updates, including at the KHLP Board meetings when requested.

Site monitoring and visits

Environmental inspections are planned and carried out with the environment inspectors at the Project site. Communication between FLCN and the Manitoba Hydro environmental site team is open and the site team is accommodating to requests.

Events and activities at a glance:

- Monitored FLCN's traditional territory, and participated in environment site inspections at site with Manitoba Hydro;
- Attended a re-vegetation workshop with Manitoba Hydro, FLCN resource users and members;
- Planned ATK budget and work plan with Manitoba Hydro;
- Conducted worker family survey interviews with FLCN members in Fox Lake, Gillam, and at site;
- Participated in professional development opportunities including CPR and First Aid, WHMIS/MSDS, bear awareness, chainsaw certification, field level hazardous assessment, fall rescue, PAL and GPS, and boat patrol safety;
- Helped plan and participated in the spring Cultural Camp (specifically with goose harvesting), the Deer Island Gathering, and sturgeon stocking/release events;
- Attended IAU and implementation staff meetings, and collaborated on resources with the FLCN Implementation and Future Development office;
- Participated in fieldwork activities with WRCS consultants, North South consultants, Intergroup consultants, Manitoba Important Bird Areas program staff;
- Coordinated and managed the Youth Trapping program (Year 2);
- Attended a Moose Workshop co-hosted by Nisichawayasihk Cree Nation (NCN) and Nature United;
- Accepted opportunities to shared knowledge with students during school visits;

- Coordinated a MAC Open house and AGE community engagement session at Gillam School;
- Participated in tele-conference meetings with partner First Nations regarding collaborative monitoring and attended the Atikok collaboration workshop; and
- Coordinated MHHIG workshops: hair sampling, information sessions.

Planned ongoing events/activities:

- Developing summer Cultural Camp programs;
- Coordinating a Sturgeon Hatchery tour and Project site tours;

- Harvesting berries and medicines, as well as traditional foods for Elders, members, and the community freezer including walleye, pike, white fish, sturgeon, ducks, geese, moose and caribou;
- Developing "Respectful Harvesting" posters;
- Continuing to monitor FLCN's traditional territory and the Project area; and
- Coordinate community canoe trips.





Students participate in the Mercury and Human Health Kids Workshop

Mercury and Human Health

In order for the Project to go forward, many protection plans are needed during the construction phase to complete the project as environmentally safe as they can. The KHLF started a committee called the Mercury and Human Health Implementation Group (MHHIG) which created the role of the Mercury Community Coordinator (MCC) to oversee the implementation of the Mercury and Human Health Risk Management Plan. The MCC organizes and promotes community-based workshops and education sessions regarding mercury and fish in the Project foot print. Part of the job includes completing hair sampling and food surveys with the members of Fox Lake Cree Nation.

Mercury and Human Health Kids Workshop

During the Spring Cultural Camp, the MCC held a workshop for children and youth of FLCN. In order to build a better understanding of fish and mercury, the communication products (a poster, placemat and fish tape) were used to offer basic facts about mercury and

human health. The MCC quizzed the kids with some common questions listed on the poster. The fish tape served as a useful tool to explain safe consumption of three predatory fresh water fish found in Stephens Lake. There was a coloring contest and the winners and other participants were awarded various prizes for their efforts. A mercury activity booklet was distributed which shared the MCC's contact information, a word search puzzle, the coloring activity and a fish batter recipe. Overall, the workshop was a success, the group had fun coloring, as well as asking and answering questions.

Hair Sampling and Food Survey

MHHIG members from FLCN and those involved in the hair sampling event underwent training provided by the hair monitoring consultant (Andrea Amendola of Golder Associates). This initiative, known as "Know Your Number" offers free confidential hair mercury sampling to partner First Nations community members to help them know their number (mercury level). to make your own decision about fish consumption and how to stay within safe limits.

As part of the effort FLCN had a two-day session with community members who consume fish throughout the seasons to test their hair for mercury. Samples are sent to the lab to be tested and members are expected to get results within six weeks.

When FLCN held the service, members were greeted with a brief information session and pamphlet. During the first day we had 13 members show up; nine people completed both a hair sample and food survey. One person who was a 'minor' could not provide a hair sample due to no parental signature and one person's hair length was too short to provide a sample.

On the second day, 18 members showed up, of which nine people completed a hair sample, and 11 people completed the food survey. A few minors were without parent consent and one person could not provide a hair sample due to length.

If you are a resource user or eating fresh water fish such as Walleye, Pike and White fish throughout the seasons it is important to have your hair sampled during peak fishing seasons. FLCN will be hosting another Mercury Hair Sample and food survey service in the fall for both communities.



Population, Infrastructure and Services

Population

The Keeyask EIS predicted the Project would not result in notable change in the number of people in the partner First Nations' communities or in Gillam. However, measuring levels of in- and out-migration is difficult, with limitations existing for all related data sources. The partner First Nations have shared concern that any in-migration to their communities could stress services that are already at capacity. Population is being monitored to confirm the extent of Project-induced migration in the partner First Nation communities and Gillam.

Population data for the partner First Nations is based on data from Crown-Indigenous Relations and Northern Affairs Canada for on-reserve and on-own-Crown¹ land populations. As shown in the graph below, data for the partner First Nations from 2003 to 2018 shows periods of moderate population growth as well as moderate decline across years. In 2018, modest increases were observed in the WLFN population, and modest decreases were observed in the FLCN, TCN and YFFN populations.

Population data for the Town of Gillam is based on data from Manitoba Health's annual health statistics, which were available up to 2017 for this review period. As shown in the graph below, the population of Gillam experienced slight annual increases between 2008 and 2011, and, with the exception of a slight increase between 2012 and 2013, slight annual decreases between 2012 and 2017.

The changes in total population for the 2018 data from the partner First Nations to the end of 2017 for Gillam are consistent with trends observed over time in each

of the communities. The slight increases and decreases in population across the communities do not suggest a significant pattern of construction related in- or out-migration.

Housing, Infrastructure and Services

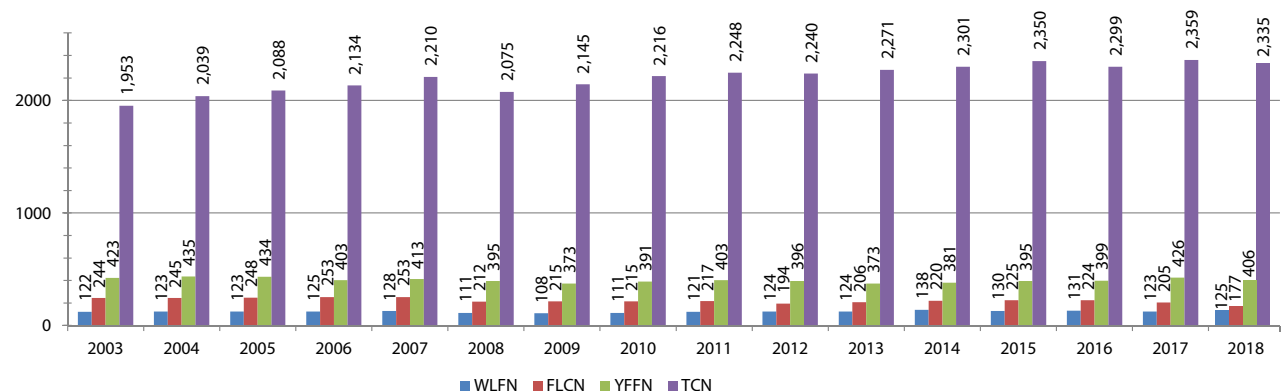
The EIS predicted minimal population migration into the partner First Nations during Project construction. Therefore, it was anticipated that little new demand for housing, infrastructure and services in the partner First Nation communities and in Gillam would be required during Project construction. Key person interviews were conducted to identify any apparent Project effects on housing, infrastructure and services in the partner First Nations communities. The results of the YFFN interviews were reported in the 2017-18 Year in Review.



Over this past year, interviews were completed by TCN, FLCN and WLFN.

The interviews completed by TCN document a number of challenges faced by service providers in Split Lake. A lack of funding was the main challenge shared by those providing childcare, recreational programming, as well as water and sewer services. It was documented that there are currently higher rates of employment in the community (i.e., reduced unemployment), which reduced need for income assistance in the community. It was also observed that there is a continual need for enhanced counselling services. In addition, interviewees noted a need for more

Total On-Reserve and On Own Crown Land Population at Partner First Nations



Source: Indigenous Affairs and Northern Development Canada

¹ On-Own-Crown lands are those lands not classified as reserve lands but Crown Lands are assigned to a particular First Nation.

community activities and recreation facilities. While service providers interviewed indicated that the Project had not changed the way services are provided in the community, an increased presence of drugs and alcohol since the start of the Project was noted. This increase resulted in other social effects within families and the community as a whole. Discussions regarding many of the key findings of the interviews are underway within the community and in forums related to the Project.

The interviews completed by FLCN document that since 2012, filling open positions in the community and retaining skilled workers for community-based jobs has been a challenge due to the availability of higher wages elsewhere. It was observed that some members who are employed on the Project have chosen to move away from the community. The interviews also suggest that due to higher employment rates, fewer members now require social assistance, but that there was an increase in the number of people accessing the services offered by Awasis². There was no observed change to

the demand for housing or education. Discussions regarding many of the key findings of the interviews are underway within the community and in forums related to the Project.

The interviews completed by WLFN indicate little change to in- and out-migration, with out-migration continuing to predominantly occur due to individuals and families accessing high school education or other postsecondary training opportunities. Members who leave the community to work on the Project maintain their residency and return. Although in-migration has not changed significantly, the demand for new housing has grown since 2012 with many members expressing interest in living in the community especially with in-community training becoming increasingly available. The most negative outcome identified through the interviews was an increase in drug consumption by members and youth due to greater access to a range of harmful drugs as a result of Project employment. Positive outcomes documented through

the interviews include improvements to the wastewater treatment system and equipment purchases that are being funded in part from revenues generated from WLFN participation in the Project. The interviews also revealed the Keeyask experience has strengthened members' commitment to education and training to obtain employment opportunities in general. Discussions regarding many of the key findings of the interviews are underway within the community and in forums related to the Project.

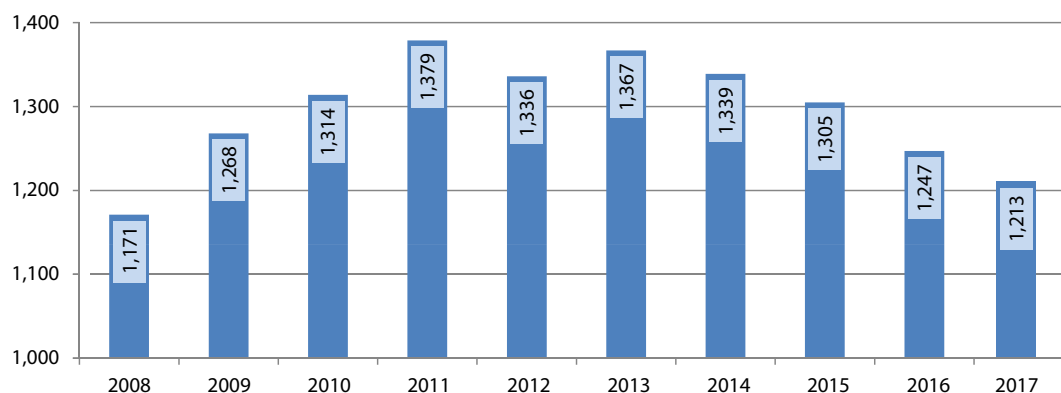
Worker Family Survey

The Keeyask EIS noted some uncertainty about how the employment experience during Project construction would affect workers and their families. To address this uncertainty, a worker family survey was undertaken over 2018 to assess the experiences of a sample of partner First Nations members employed on the Project and their families.

The worker family survey covered a wide range of socio-economic topics, including work and camp life, employee experience with measures taken to create a positive workplace culture at site, employee experience with unions, family experience, effects of employment on traditional activities, and community changes as a result of the Project.

The worker family survey was undertaken as a collaborative process. Manitoba Hydro and each of the partner First Nations initiated work on the survey over the fall of 2017 and winter of 2018. Initial work focused on developing a survey that reflected regulatory monitoring commitments, community needs and current understandings of important socio-economic themes related to the Project. The survey was developed

Gillam Population (2008-2017)



Source: Manitoba Health

² Awasis is the northern agency responsible for the provision of a wide range of services to children and families aimed towards health, well-being and balance within the family unit.

through bilateral discussions between Manitoba Hydro and each of TCN, YFFN, FLCN and WLFN. Community researchers were engaged with each of the partner First Nations to help conduct the surveys with their members.

The survey process has not been completed in its entirety with all four Partner First Nations. To-date, survey findings have confirmed some of the challenges previously identified through the KWCA, as well as in ongoing Project forums. The results to-date have also identified positive aspects of employment on the Project, and provided an understanding of the effectiveness of existing mitigation measures such as the Keeyask Respect Campaign, Aboriginal Awareness Training, and on-site counseling.

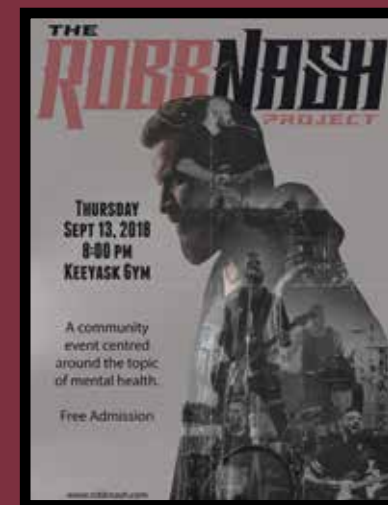
As survey results have become available, Manitoba Hydro and each of the partner First Nations have and will continue to work collaboratively to review findings and take actions as required. The combined final survey results for all four Partner First Nations will be shared among the partners and will be used to continue to improve the experiences of workers and their families.

Social Mitigation

An important component of socio-economic monitoring is ongoing discussions with communities to identify and address concerns or issues as they arise. Concerns have been raised by the partner First Nations that the Project has contributed to an increase in the presence and use of drugs and alcohol in the region, at the Project site and in the communities. The Project Drug and Alcohol Standard provides the opportunity for treatment where addiction is present. The treatment for addiction not only supports a safe working environment, but also improves the lives of the individuals and their families.

Robb Nash Concerts

During 2018, Robb Nash concerts were coordinated and sponsored in each of the partner First Nations and at the Project site. The Robb Nash Project is an initiative that engages young people through music and storytelling to inspire hope and encourage positive life choices. These shows tackle difficult topics such as bullying, addiction, self-harm and suicide.



A Robb Nash Concert poster at site

Manitoba Hydro and each of the partner First Nations have discussed what supports can be provided at the community level to mitigate any potential increase of drugs and alcohol associated with the Project. Follow-up support by the substance abuse professional hired to support the Project site occurred in all four partner First Nations. This included community visits by the substance abuse professional, as appropriate, to assist in undertaking an inventory of available local services and to provide additional training and support to community service providers. As well, efforts were made to connect the partner First Nations with the Winnipeg Bear Clan to determine whether any community safety supports could be offered. The Bear Clan is a community grown and based organization

that works towards creating safer communities. Their activities include street patrols, crisis intervention, educational outreach and conflict resolution.

The partner communities also raised concerns regarding possible cases of sexual exploitation and sexual assault. In February 2018, representatives from the partner First Nations and Manitoba Hydro met with members of a regional team tasked with the prevention of sexual exploitation (including members of the provincial initiative Tracia's Trust³ to discuss what supports could be provided at the Project site and at the community level to address concerns about sexual exploitation. A wealth of resources and supports were offered during this meeting, including provincial supports and non-governmental/not for profit supports.

³ Tracia's Trust is the Province of Manitoba's Sexual Exploitation Strategy

Follow-up activities were undertaken as requested by individual communities. This has included making connections between YFFN and TCN and regional RCMP staff specializing in the prevention of sexual exploitation.

With the assistance of the provincial Tracia's Trust Initiative, on-site training and broader communication materials were developed and delivered on site regarding sexual exploitation. Representatives from Tracia's Trust visited the Project site in October 2018 to conduct "train-the-trainer" sessions, including some initial pilot training and awareness sessions. Contractors now have trained individuals on staff to continue to deliver this message going forward. Manitoba Hydro will be organizing monthly awareness sessions at the Project site in the evenings.

The Keeyask Harassment and Discrimination Free Standard was amended to clearly define sexual harassment. Project Site and Camp Rules have also been amended to make it clear that purchasing and propositioning sex is illegal. New communication materials will include crisis contact numbers and information regarding sexual exploitation.

Tataskweyak Cree Nation Student Video Project

In early 2019, a group of TCN high school students visited the Project site to create a video profiling community members who work on the Project. The students participated in aspects of the video production including developing interview questions, conducting the interviews at site and working on video editing. Students also gained a sense of what it's like for community members, who may also be family, at site.



Left and right: TCN students take part in a video project at site





Gillam Hospital

Worker Interaction

A Worker Interaction Subcommittee (WIS) was established prior to Project construction to deal with anticipated increases in the Gillam area workforce resulting from the Project, other Manitoba Hydro projects, or related work occurring concurrently in the area.

WIS is a forum for information sharing and communication to identify potential worker interaction concerns, prevent issues to the extent possible, and identify ways to work cooperatively to address issues as they arise. The mandate includes addressing any related increases in the demand for services and accommodation in Gillam. WIS members are Manitoba Hydro, FLCN, the Town of Gillam, the RCMP (Gillam Detachment), the Gillam Hospital, and the Gillam School. Other stakeholder members attend as needed.

WIS met three times in 2018-19 to continue monitoring and discuss topics of community interest. Particular areas of interest related to public safety, community services and infrastructure. Service providers, including the Gillam Hospital and local RCMP provided regular updates which helped assess whether new efforts were required to address demands on health services, policing and other concerns. The WIS also established an 'incident tracker' to monitor and respond to specific community concerns and incidents.

Since the establishment of WIS, several mechanisms were put in place to deal with identified issues such as local road conditions and traffic safety, use of Gillam services and facilities, and the behaviour of non-local contractors. This included the establishment of a "PR 280/PR290 Taskforce", an onsite Nurse Practitioner at Keeyask camp, and cultural awareness programming for contractors working in the Gillam area. As a result, there were fewer incidents reported to WIS this past year than in previous years.

WIS members living in Gillam and Bird (a community of Fox Lake) have expressed concern about an increased presence of drugs in the region. WIS has attempted to address this issue acknowledging that the intense activity in the region, particularly relating to the construction of the Project, has contributed to increased access to and use of drugs (through employment on the Project). As a first step to develop a longer term strategy to deal with this issue, WIS hosted a special meeting, "Moving Towards a Community-Based Strategy: Addiction Issues", which involved representatives from local service providers including FLCN and Northern Health Region health care providers.

Additional examples of adaptive measures during 2018-19 that respond, in part, to concerns and topics raised at WIS include:

- Continued implementation of cultural awareness training for short-term contractors in Gillam by FLCN;
- Enhanced counseling supports to local residents; and
- Continued provision of health care services, including a nurse practitioner and emergency medical services, on-site at the Project.

The information provided by WIS members will continue to be used to assist in identifying potential adaptive measures to reduce the impacts of hydroelectric development in the region.



Gillam school

Travel and Public Safety

Provincial Roads

While the EIS predicted that existing transportation networks and plans for Provincial Road (PR) 280 upgrades would be able to accommodate the changes in road use associated with Project construction, community concerns remain regarding traffic safety and road conditions.

In response to community concerns, the Province, which is responsible for maintenance and upgrades to Provincial Road (PR) 280, established the PR 280 Joint Advisory Committee in the fall of 2014. The committee is comprised of representatives from the Province of Manitoba, Manitoba Hydro, the Town of Gillam, and the partner First Nations communities and assists in the planning of upgrades to PR 280. In the period between April 2018 and March 2019, the PR 280 Joint Advisory Committee met in May of 2018.

A number of mitigation measures were adopted to reduce the impact of Project traffic on PR 280 including road reconstruction and increased maintenance efforts, operation of the Provincial Trunk Highway (PTH) 6 weigh station near Thompson, the construction and operation of a new temporary weigh station located near the junction of PR 391 and PR 280, and communicating driver expectations to contractors in an effort to promote appropriate driving behavior on PR 280.

In the fall of 2016, Manitoba Hydro developed a comprehensive transportation management plan to reduce the impacts of project traffic on PR 280. The plan includes pre hauling construction materials to site during the winter months, night hauling, reductions in

Manitoba Hydro truck traffic, and reductions in truck weights during periods when the road has deteriorated substantially. The plan will help reduce wear and tear on the road and allow Manitoba Infrastructure (MI) to focus on areas requiring increased maintenance.

Manitoba Hydro, in collaboration with Manitoba Public Insurance (MPI) and the RCMP will continue to monitor traffic volumes, speeds, and vehicle types on PR 280 and PR 290.



Weigh station located on Provincial Road (PR) 280



Grader on Provincial Road (PR) 280

Traffic Volumes

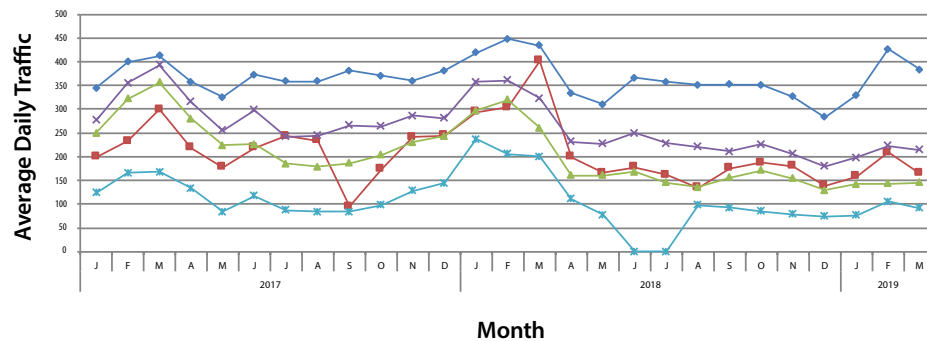
Traffic volume data is typically collected by MI every two years. Traffic data for PR 280 is divided into three segments: PR 391 to Split Lake, Split Lake to the PR 280/PR 290 intersection, and PR 280/ PR 290 intersection to Gillam. Use of PR 280 and PR 290 has steadily increased since 2003. A larger increase in use has been observed since the start of construction on the Project as anticipated.

To better understand traffic patterns during construction, Manitoba Hydro worked with MI to have five permanent traffic counters installed on PR 280 and PR 290. The segment of PR 280 with the highest traffic volumes is between PR 391 and Split Lake where from April 2018 to March 2019, the average traffic counts (northbound and southbound combined) were 347 vehicles per day. Of the 347 vehicles per day, 63 were large trucks.

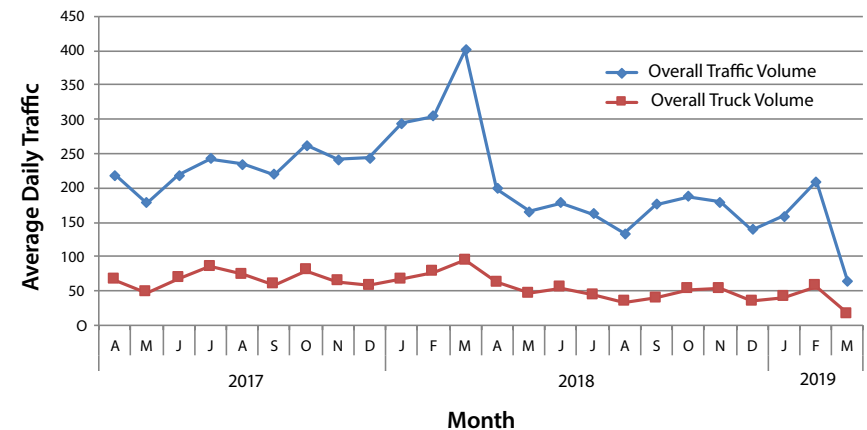
Collision Information

Collision rates along PR 280 and PR 290 remain below the industry standard threshold of 1.50 million vehicle-kilometers of travel (MVKT). Collision rates are a factor of annual average daily traffic (AADT) volume, road length and reported collisions. Spot grade improvements, localized design considerations, and other road safety improvements are being implemented to address ongoing concerns and to improve the driving experience for all road users.

**Total Traffic Volume - Monthly Variations
(Northbound and Southbound)**



**Total Traffic vs Truck Traffic at Site 2 - Monthly Variations
(Both Directions Combined)**



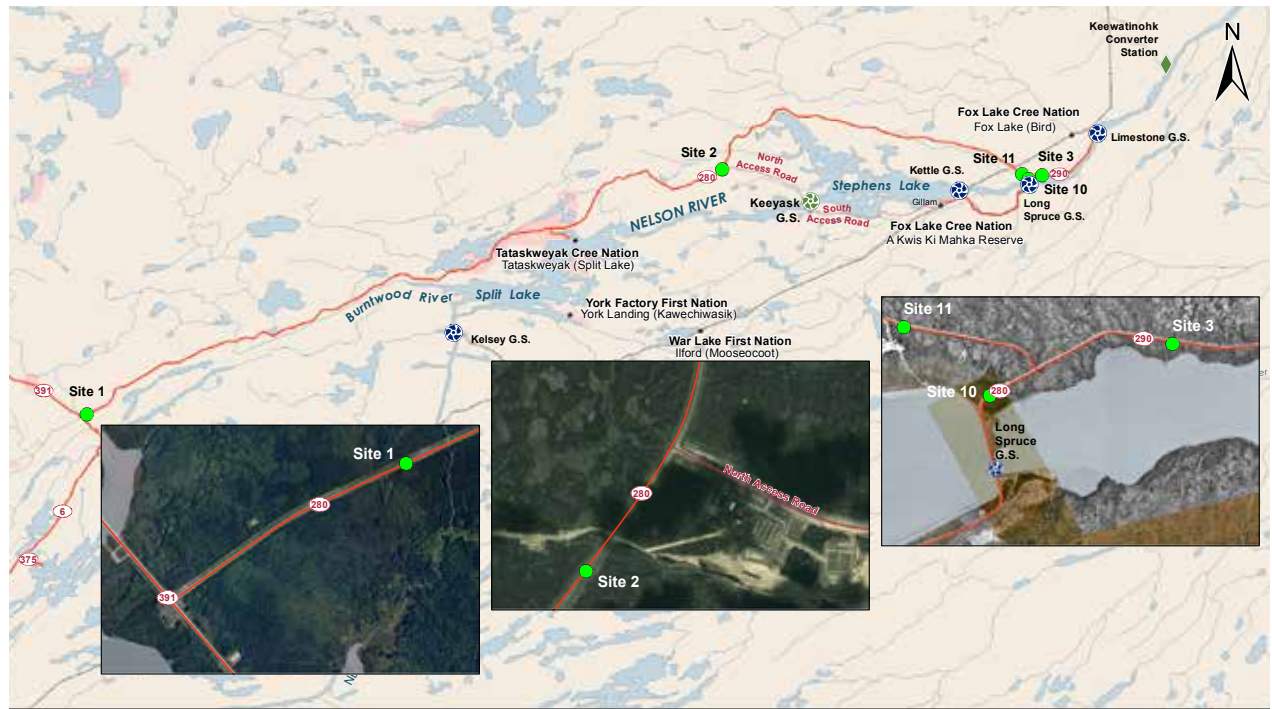
Keeyask Site Access

The Keeyask North Access Road connects PR 280 to the construction site. It is a private road with restricted access, which is controlled by a security gate near the PR 280/North Access Road intersection. The gate office is staffed 24 hours per day, 7 days per week, and security staff document all authorized vehicles entering and exiting the road. On average, 106 vehicles per day used the road between April 2018 and March 2019.

Traffic counts from the monitoring station located at PR 280 Site 2, which is the closest station to the Keeyask North Access Road, allows construction related traffic to be compared to the overall traffic on PR 280. Over the past year, these two sets of traffic counts indicate that the percentage of Keeyask related construction traffic varies monthly and accounts for 48 per cent to 87 per cent of all traffic on PR 280 near the PR 280/Keeyask North Access Road intersection.

The Keeyask South Access Road makes it possible to cross the Nelson River to access the south side construction area and Keeyask camp from Gillam, resulting in a reduction of construction traffic on PR 280. Traffic is restricted to authorized construction and project vehicles only and all access is documented by gate security staff. On average, 95 vehicles per day used the road between April 2018 and March 2019. Data is reflective of all traffic types including daily construction activities such as hauling.

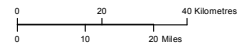
When the Project is complete, the North and South Access roads will become part of a re-routed PR280, which will route across the Keeyask Generating Station. This will provide a much shorter route from Thompson to Gillam.



Traffic Monitoring Station Locations

Legend

- Traffic Monitoring Station
- ⊗ Generating Station (Under Construction)
- ⊕ Generating Station (Existing)
- First Nation Reserve
- Rail



Waterways Management Program

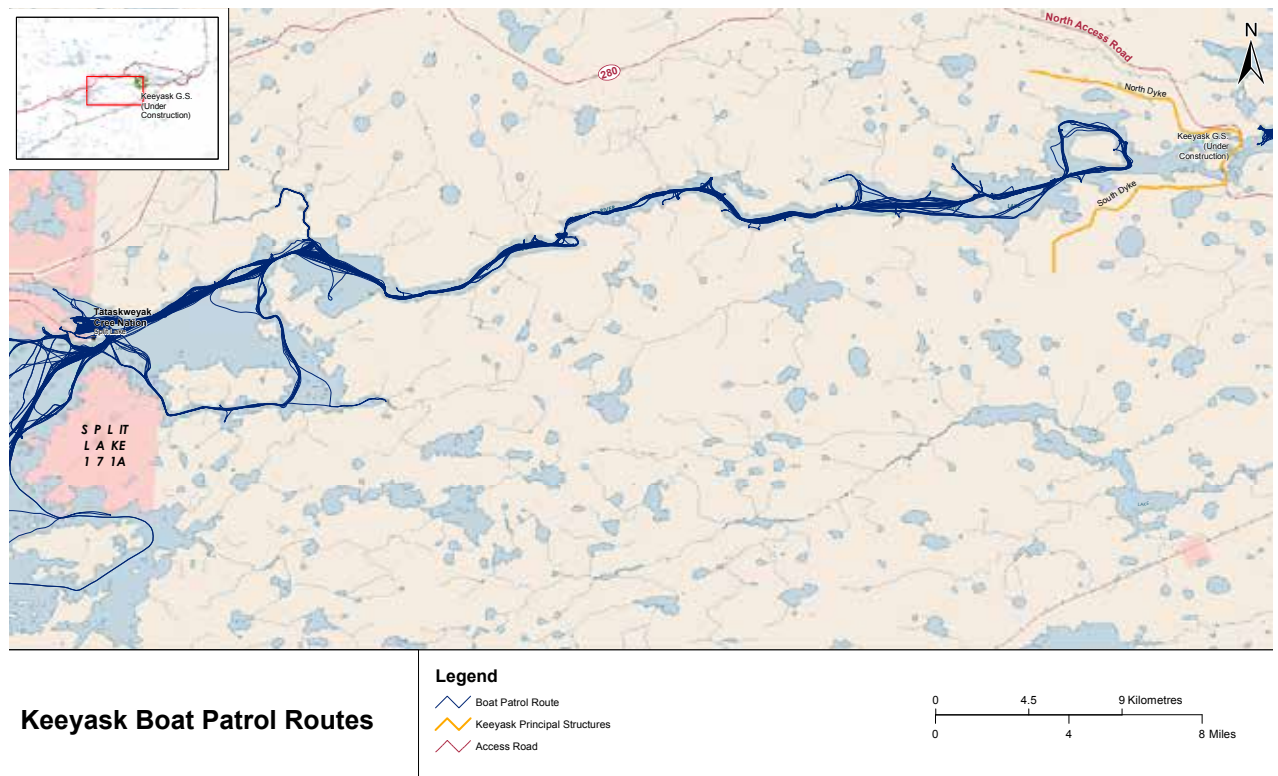
The purpose of the Keeyask Waterways Management Program (WMP), as defined in the JKDA, is to contribute to the safe use and enjoyment of the waterway from Split Lake to Stephens Lake throughout the construction and operational stages of the Project. The Keeyask WMP is currently implementing two safety initiatives focusing on safe water travel and safe ice travel. Through these initiatives, four members of Tataskweyak Cree Nation were employed to provide safe navigation on the waterways throughout the 2018-19 open water season and three local resource users were contracted to install and maintain safe ice trails during the winter. These community members bring traditional knowledge and a valuable understanding of the waterways as they spend much of their lives on the water. They are often called upon for their expertise and serve as an information line between local resource users, leadership and Manitoba Hydro.

Boat patrol

The Keeyask Boat Patrol Program ran for 24 weeks from the end of May to October 2018, and played a major role in monitoring and minimizing the hazards caused by debris in the waterways. Throughout that time, the boat patrol crews travelled the length of the Nelson River routinely between the community of Split Lake and just upstream of the Project site at Gull Rapids and identified safe travel routes. The patrollers' daily presence enhances safety for users of this stretch of the Nelson River. The total distance travelled during the program was over 5,775 kilometres. In addition to patrolling the waterways, the crews also provide



Keeyask Waterways Management Program boat patrol



support for emergency response, resource user requests for assistance, and general assistance to community members during the open water season.

Keeyask Safe Ice Trails

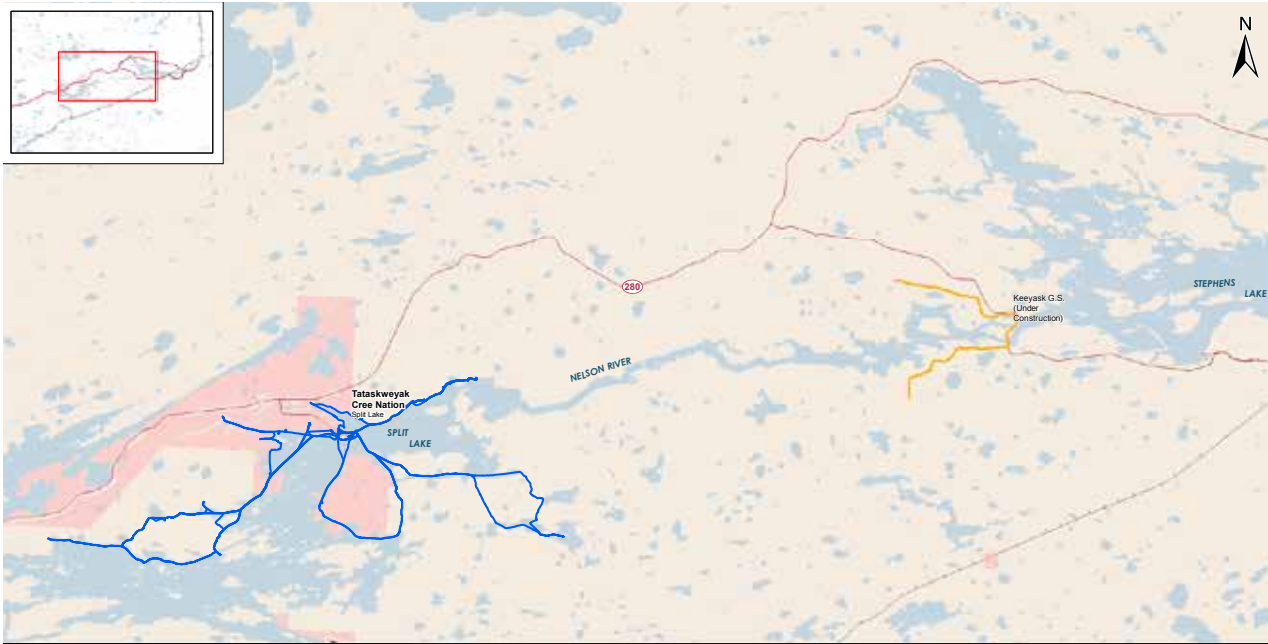
The Keeyask WMP safe ice travel initiative is implemented as part of the Safe Ice Trails Program, which is intended to provide safe travel on Manitoba Hydro regulated waterways during the winter months. During the winter season from February to April 2019, three community members were contracted to install, monitor and regularly maintain over 100 kilometres of safe ice trails on Split Lake. Following impoundment, and when it is safe to do so, safe ice trails will be installed closer to the Project site.



Colton Moose (MH), Eugene Kitchekeesik (MH) and Danika King (MH) from the Waterways Management Program boat patrol



Large floating debris is removed from the water by the boat patrol team



Keeyask Safe Ice Trails

April 1, 2017 – March 31, 2018

- Legend**
- Safe Ice Trial (Installed and Patrolled)
 - Access Road
 - Keeyask Principal Structures

0 8 16 Kilometres
0 7 14 Miles

Heritage Resources

Monitoring and mitigation of known archaeological sites took place in the summer of 2018. Three separate trips to salvage heritage resources occurred in June, July and August. Project archaeologists visited 50 registered archaeological sites, recorded three new sites and inspected the dewatered Tailrace Cofferdam. Members from TCN and FLCN participated in site investigations.

More than 800 artifacts were recovered from the 53 archaeological sites in 2018-19. All artifacts were cleaned, analyzed, catalogued and prepared for submission to the Manitoba Historic Resources Branch. Interesting finds included stone arrow heads, decorated pottery and a metal spear head. Human remains were discovered at a previously identified 4,000-year-old burial site. These finds were part of the partial remains of the Gull Lake Ancestor that were recovered in 2010. The Ancestor's remains are currently resting at TCN's Stewardship Centre and will be reinterred in the Keeyask Cemetery.

A total of 13,971 artifacts (8,111 artifacts and 5,860 animal remains) have been collected during the Project mitigation program (2014-present).

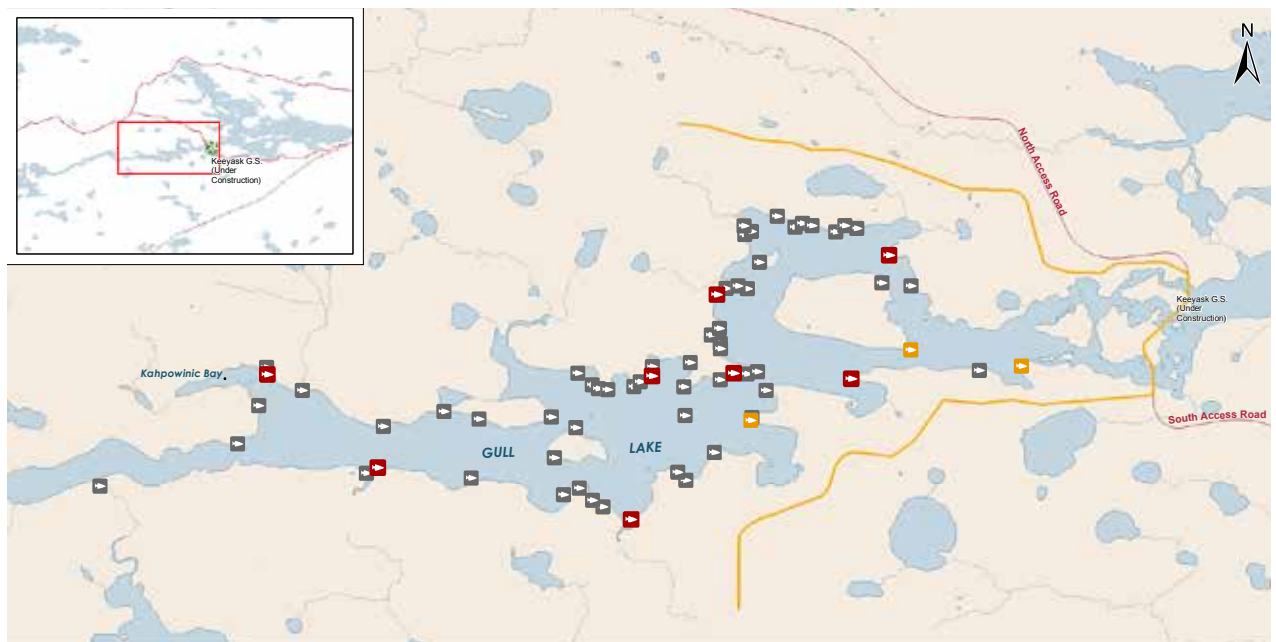
Within the Keeyask work site, protocols are in effect including immediate notification whenever there is the possibility of discovering or disturbing heritage objects or human remains. To safeguard and properly manage any discoveries, work is stopped immediately to allow for an archaeological assessment. No human remains or heritage artifacts have ever been found at the Keeyask construction site.



Early Laurel Pottery (dating back 2000 years) is found during excavation work



Members from FLCN and TCN take part in a shoreline survey for heritage artifacts



Heritage Protection and Mitigation Fieldwork

April 1, 2018 – March 31, 2019

Legend

- Mitigated Archaeological Site (2014-2017)
- Archaeological Site to be Mitigated
- Mitigated Archaeological Site (2018)

0 1.5 3 Kilometres
0 1.5 3 Miles

Culture and Spirituality

Since the start of construction, various measures were put in place to support the retention of northern and Indigenous employees at the job site, and to ensure that sensitivity and respect for local culture is maintained throughout construction of the Project. These measures include orientation sessions for partner First Nation members, on-site Aboriginal Awareness Training for employees, voluntary counseling services, cultural ceremonies acknowledging key construction activities, sweat lodge ceremonies, smudges and blessings when required on the Project site.

These activities and services are the responsibility of the Employee Retention and Support Services (ERS) staff. Teaching employees about the local culture and historical impacts of project development through Aboriginal Awareness Training is a main focus of their work. They also take great pride in providing cultural and personal support to all workers on the Project. Traditional ceremonies conducted by ERS provide opportunity for community members to take part in their spiritual practices. They are conducted to show respect and gratitude to the Creator for the life-sustaining resources provided by the land and water, and to support individual well-being. Non-Indigenous employees who participate in ceremonies gain a greater understanding of the Cree worldview, that everything is connected and the sacred relationship Cree people have with the land and water.

KCN Site Member Orientation

The purpose of these orientation sessions is to prepare partner First Nations members for the construction camp experience and enhance their prospects of

achieving the benefits from employment on the Project. The focus is on key factors that affect the economy, culture and social conditions of each community. This includes the historical and ongoing effects of hydro development and relationships with Manitoba Hydro.

Aboriginal Awareness Training

On-site training workshops are provided for staff working at the Project site. As a result of the dedicated team effort between Site Liaison, ERS and project contractors, and with an active workforce of over 3,870 in the peak months, 99 per cent of workers have received training between April 2018 and March 2019. A total of 3,718 employees completed the training and 155 training workshops were held. The purposes of training workshops are to:

- Increase understanding and appreciation of the cultural differences, beliefs and values of individuals within the various communities working at the site;
- Enhance comfort in living, working and/or doing business in a culturally diverse environment;
- Identify barriers and issues between the various parties working at the site;
- Identify common goals;
- Develop strategies and action plans for addressing issues/barriers, reaching common goals and developing and maintaining long-term harmonious relationships;
- Increase participants' understanding of contemporary issues facing Indigenous peoples;

- Challenge participants to re-think their assumptions and personal biases about Indigenous peoples;
- Provide participants with information that will promote understanding and respect of Indigenous cultures, enabling participants to work effectively with Indigenous peoples; and
- Increase participants understanding of what a harassment and discrimination free work environment means and what each individuals' responsibilities are to maintain a work environment that is safe for all.



Dora Beardy (ERS) leading an Aboriginal Awareness Training session



On-site Counseling

On-site counseling is available to help all employees, on a voluntary basis, to deal with any issues experienced while working on the Project. This could include: work adjustment problems, vocational/career issues, cultural adjustments, family stresses, money management, and alcohol and narcotics anonymous. The intent is to reduce attrition for all workers by assisting them in dealing with challenges directly affecting their work performance.

Cultural Site Ceremonies

Site ceremonies were held at key construction milestones to help mitigate the effect of the Project on partner First Nations culture, and to demonstrate respect for the land and all that is supported by the land. Attendance at ceremonies is welcome and voluntary, and consists of various community members and staff of the contractors and Manitoba Hydro. Some

ceremonies held included a Water Ceremony, National Indigenous Peoples Day Ceremony, First Rock in the River Ceremony, River Diversion Ceremony, Fall Ceremony, Grandmother Moon Ceremony, Spring Ceremony and a Feasting of the Pipe Ceremony.

The River Diversion ceremony held on August 31, 2018 at the Project site recognized the diversion of the Nelson River through the Spillway. River diversion is the term for the waters of the Nelson being channeled through the Spillway. The ceremony was held on the south shore of the river within sight of the Spillway. The event honoured both Christian and Traditional beliefs by including script readings and gospel singers, a pipe ceremony and water ceremony, and a feast for over two hundred people in attendance. Community members from the four partner First Nations were in attendance alongside Manitoba Hydro-Electric Board members, Manitoba Hydro executive and Project staff.

The ceremony acknowledged the sacred relationship the four partner First Nations have with water. Water is respected for its life-giving, life-sustaining and healing gifts and is part of everyday life for the partner communities. The Nelson River is used for transportation, to access traditional food and medicines, and to enjoy recreational activities. Once the river changed course, traditional water and land use was altered forever.

Preparation for the Spring Ceremony in March 2019



Sweat Lodge

A sweat lodge and teepee area was set up at site in September 2017. Since that time numerous sweat lodge ceremonies have been held which accommodate both night and day shift workers. The sweat lodge is a circular, dome-shaped structure used for many purposes in Indigenous culture. Through ceremonies, it offers a way of clearing, cleaning and freeing obstacles, obstructions and blockages to healing and well-being. During a purification ceremony, participants talk with and listen to the Creator and Grandfathers and Grandmothers for guidance. There are similarities between the physical body and the sweat lodge. Your skin is like the sweat lodge cover; ribs are like the willows; heart beat is like the drumming; songs are your life lived.



River Diversion Ceremony in August 2018



Mercury and Human Health

As a result of past experience with hydroelectric development, the partner First Nations raised the issue of mercury and human health as a primary concern in relation to the Project. Because Cree culture, spirituality and wellbeing is grounded in respecting the relationship and balance between people, land, water, and all other living beings, discussions about ‘mercury’ cannot be separated from the larger environment. Manitoba Hydro and the partner First Nations have been working together since 2007 to study the issue holistically and communicate balanced information related to mercury and the Project. The KHLP, through the Mercury and Human Health Implementation Group (MHHIG), with advice from technical and health experts, developed a *Mercury and Human Health Risk Management Plan*. Key components include: a communication strategy about fish consumption for resource users in affected waterbodies; monitoring of mercury in fish, wildlife and plants; voluntary hair sampling; and periodic human health risk assessments.

Mercury is a metal found naturally in small amounts in rock, air, soil, water, and living organisms. It can be released into the environment through natural processes, but mainly as a result of human activity related to industrial development. When organic material such as peat is broken down by bacteria, mercury is converted to a more toxic form called *methylmercury*. *Methylmercury becomes more concentrated as it moves up the food web from bugs to smaller fish to larger predatory fish*. This process occurs in the natural environment and can be accelerated by processes such as flooding. It is most affected by unnatural causes, like the larger scale flooding caused by the creation of a hydroelectric reservoir.

The creation of the Keeyask reservoir is predicted to raise mercury (methylmercury) levels in fish in Gull Lake and to a lesser extent, Stephens Lake. Fish mercury levels are estimated to peak 3 to 7 years after flooding and gradually decrease over the next 20 to 30 years to levels similar to non-impacted waterbodies in the region.

People can be exposed to mercury (methylmercury) through eating fish. Large, predatory fish, like pickerel and jackfish, generally have higher mercury levels than smaller fish. Fish that generally have lower mercury levels include whitefish or smaller-sized pickerel and jackfish. Too much mercury can cause human health problems, particularly for those whose brains are still developing, such as children and babies (even before they’re born).

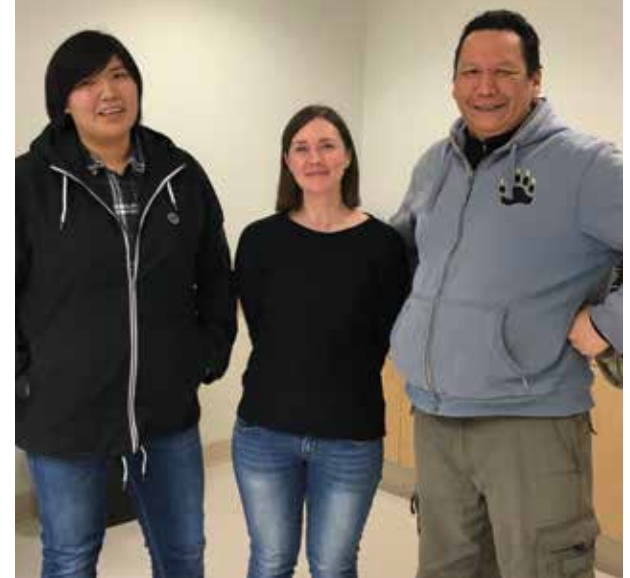
Because fishing, preparing and eating fish are important parts of a healthy traditional lifestyle, the MHHIG is working to build understanding in the partner First Nations communities about mercury and the risks and benefits of eating fish.

MHHIG activities in 2018-2019 included:

- Planning for and/or conducting hair sampling and food surveys programs in partner First Nations communities, which is an effective way to find out how much mercury is in your body:
 - This included the hiring of Golder & Associates to assist with the development and implementation of the hair sampling and food survey programs;

- A “Know Your Number” campaign was developed to generate interest about voluntary hair sampling and food surveys. The goal is to allow partner First Nation community members to understand their personal mercury exposure and to make informed decisions about their fish consumption practices;
- TCN and FLCN hosted pilot events for hair sampling and implementation of the food survey in February 2019. A total of 40 hair samples were collected. Individual results will be returned to participants privately by letter. Nutritional counselling will be available if desired. All four partner First Nations communities are planning to undertake these programs in the fall of 2019 and will continue to offer sampling following flooding.

Mercury Coordinators (from left to right) Lyndsey Keeper (TCN), Andrea Amendola (Hair Sampling Lead, Golder and Associates), Clayton Flett (TCN)



- Distribution of communication materials intended to educate users about mercury in fish and provide consumption advice for those consuming fish from the reservoir and downstream areas (e.g., posters, fish tape, and a short introductory plain language video), and brochure to promote awareness of voluntary hair sampling and food surveys events;
- Employment of a 'Mercury Community Coordinator' in each partner First Nation community to assist in the implementation of mercury and human health related activities. An orientation was provided to each Coordinator as well as federal and provincial health care providers to familiarize them with the Keeyask Project and related mercury and human health activities;
- A "roll-out" session in each partner First Nations community (early May 2018) to introduce community members to the Keeyask Mercury and Human Health Risk Management Strategy, associated communication products and to discuss the issue of mercury and human health; and
- Monitoring for mercury of fish and in wildlife and plants in the Project area (including a voluntary sampling component, where partner First Nations community members can submit plant and wildlife samples for mercury analysis):

- o Communication products for Keeyask Project area were revised in 2017 to reflect updated fish mercury concentrations, based on Health Canada and World Health Organization guidance. In addition, there is no anticipated Project effect on fish mercury levels in Landing (Aiken) River, and results for monitoring undertaken in 2018 indicate similar results in fish mercury levels as those reported in 2015.

- o Samples of plants (blueberries and Labrador tea) and beaver collected in 2017 and 2018 showed that levels of mercury are low and would be safe to consume based on previously reported consumption rates. The most recent wild game/waterfowl sampling of select species identified as key food groups (moose, snowshoe hare, muskrat, ducks or gull eggs) has not provided sufficient data to confirm the earlier conclusion that these foods are safe to consume at reported consumption rates.



Mercury hair sampling event for FLCN members

KNOW YOUR NUMBER

Fox Lake Cree Nation | Tataskweyak Cree Nation
War Lake First Nation | York Factory First Nation

Hair Sampling and Food Survey Campaign

Water

Flows, Levels and Ice

After record high flows reached 6,500 m³/s at the outlet of Split Lake during the previous year, flows in 2018 receded to average or just below average conditions. In the fall, flows out of Split Lake dropped to 2,700 m³/s, which are the lowest observed since the start of construction.

In early August 2018, the Spillway gates were opened for the first time and the Spillway became fully operational. Two weeks later, the river was diverted after rock was placed across the south channel of Gull Rapids and the entire flow of the Nelson River began passing through the Spillway.

Ice conditions in 2018-19 were similar to the previous winter. Initial freeze up on Gull Lake occurred in early November and by late winter the ice cover had extended up through Birthday Rapids.



The Spillway was put into operation in August 2018



After the Spillway was put into operation, work began to divert the remaining channel of the Nelson River in August 2018



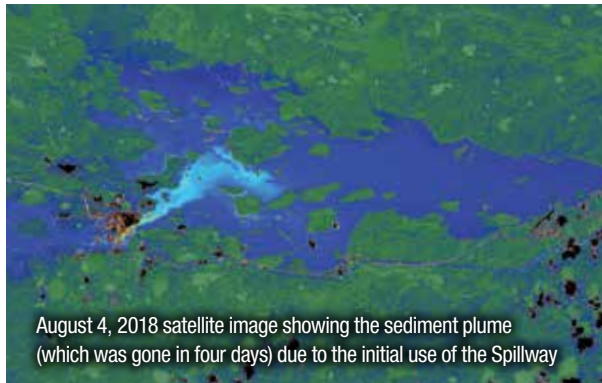
The Ice Boom, which promotes upstream ice formation, is visible in the foreground and the Spillway can be seen in the distance (November 2018)

Water Quality

The greatest effects of construction on water quality relate to increasing the amount of sediment, such as sand and clay, in the Nelson River. The sediment can come from building structures in the river (e.g. cofferdams), from riverbanks that erode because of changing water levels or loss from the land where the vegetation was cleared.

The Keeyask Environmental Protection Plan (EnvPP) requires that any water that is pumped from the site to the river must contain less than 25 mg/L of total suspended solids (TSS). TSS is a measurement of the amount of sediment that is carried in water. In 2017, approval was provided to amend the EnvPP to discharge impounded water with TSS up to 50 mg/L at designated discharge locations. This change was required due to the expected difficulties in managing the spring melt resulting from the large snow fall in March 2017. It was also needed to handle the challenges previously experienced while attempting to dewater areas behind cofferdams due to seepage, anticipating there would be similar issues in future construction seasons. When the TSS exceeds this limit, it is treated by being pumped either into a settling pond or into thick vegetation on land where it seeps into the ground and the sediment filters out. Increasing the concentration to 50 mg/L of TSS has no measurable effect on water quality and aquatic life in the Nelson River.

Besides monitoring sediment in water pumped away from the construction site, sediment in the river is monitored constantly during construction using in-stream sensors. Some of these sensors provide monitoring results in real-time every 15 minutes, 24 hours per day. Results measured immediately upstream of the construction area in Gull Lake are compared with results



measured approximately two kilometres downstream of the rapids to determine if there are changes in sediment levels due to construction. This allows site personnel to take immediate action to modify in-water construction work to prevent the sediment from getting higher than what is acceptable to the regulator.

Opening the Spillway gates was predicted to be one of two major sediment release events during the Project; the other event is commissioning the generating station. For this reason, the Spillway's first use was carefully planned by opening the first gate slowly; in one metre increments over the course of a day, to prevent a massive amount of sediment from being scoured and flushed down the river all at once. While this occurred, site personnel watched the real-time sediment results to check if the sediment began to get too high. The staff monitoring the sediment information kept in contact with those opening the gates and the gates would not be opened more until the sediment had dispersed. The peak sediment concentrations were lower than predicted (60-75 mg/L above the sediment levels in the water upstream and unaffected by the Spillway operation vs. predicted increases of 250-300 mg/L). The greatest increase in sediment observed occurred on the first day, August 3, and sediment in the water returned to typical

levels approximately five days later. A satellite image captured the extent of the sediment plume in Stephens Lake on August 4. During the rest of the year, real time monitoring showed no detectable increase in the amount of sediment in the river caused by construction.

Samples of water were collected from areas upstream and downstream of the construction site throughout 2018, including after Spillway commissioning, and were sent to a laboratory for analysis. A range of parameters were analyzed, including total suspended solids, metals and nutrients. Water quality parameters measured in the river were similar to what they were before construction began.



Leslie Flett (TCN) conducting water quality sampling on Stephen Lake July 2018



Water quality sampling set-up on Stephens Lake April 2018

Benthic Invertebrates

Benthic invertebrates are young insects, clams and worms that live on the sediment at the bottom of rivers and lakes. They are an important source of food for fish, including Lake Sturgeon. When the numbers and kinds of invertebrates change, it may be a sign that changes are happening in the river. Benthic invertebrates are collected at three locations downstream of the construction site each year, and the numbers are compared to samples collected in previous years. Benthic invertebrates were also collected in Split Lake in 2018 as an example of conditions within an area unaffected by construction to monitor natural changes over time. In 2018, there was no measurable change in benthic invertebrates due to construction.



Benthic invertebrates sampling using a kick net



Project site staff installing artificial substrate to monitor for zebra mussels in Gull Lake

Zebra Mussels

Zebra mussels are small, clam-like mussels that are aggressive, non-native, aquatic invasive species (AIS). In 2015, Federal and provincial legislation was implemented to contain and prevent the spread of zebra mussels, which have been found in Manitoba's southern water bodies that connect to the Nelson River. Although not found to date at the Project site, the partner First Nations and Manitoba Hydro are aware of the risks associated with introducing zebra mussels to the Nelson River and precautions are being taken to ensure that the Project does not contribute to the spread of this AIS.

During the 2018 open-water season, three artificial substrates were submerged in Gull Lake to monitor for zebra mussel growth/colonization. In-water infrastructure, such as a safety boom and buoys, were also inspected upon removal from the water for zebra mussels. No zebra mussels were observed. Also, water samples were taken and analyzed at a lab to see if microscopic zebra mussel larvae (veligers) were present. None were found.

A zebra mussel found on a beach in southern Manitoba



Hot water is used to decontaminate a boat and trailer

To prevent the spread of zebra mussels, decontamination of watercraft/water-related equipment that is used in a provincially-designated control zone is required. This is to ensure zebra mussels are killed and removed before watercraft and water-related equipment are placed into a different water body. The Nelson River is a provincially-designated control zone and therefore, decontamination must occur. In 2018, all incoming and outgoing watercraft and water-related equipment were inspected for the presence of zebra mussels and decontaminated using hot water, where required. In 2018-19 86 inspections were conducted and one hot water decontamination was performed.

Fish

Monitoring studies are focused on Lake Sturgeon, Lake Whitefish and Walleye because of their importance to the partner First Nations, and because construction and operation of the Keeyask Generating Station will change or destroy habitat they use. Spawning habitat at Gull Rapids, which is used by all three species, is being lost due to construction of the generating station. Reservoir impoundment will raise water levels, which will change Lake Sturgeon spawning habitat at Birthday Rapids and may change Lake Sturgeon young-of-the-year (YOY) habitat. Altered flows into Stephens Lake may increase the risk of dewatering Lake Whitefish eggs in Stephens Lake.



Kelvin Kitchokeesik (TCN) holding a recaptured, stocked Lake Sturgeon June 2018



Darren Chapman (WLFN) holding a Lake Sturgeon caught on Stephen Lake June 2018

The goal of the Partnership is to create a self-sustaining population of Lake Sturgeon and to maintain the current self-sustaining Lake Whitefish and Walleye populations both above and below the generating station. To achieve this, replacement spawning habitat for all three species is being constructed and will be available once construction is complete. Habitat in Birthday Rapids and Stephens Lake will also be monitored and enhanced for Lake Sturgeon, if

required. Depending on monitoring conducted during the operational phase, YOY fish habitat may also be constructed in the future Project reservoir, if required.

Lake Sturgeon Populations

Lake Sturgeon (Namao in Cree) are monitored because of their importance to the partner First Nations. Before the Project, populations in Gull and Stephens lakes were low and the generating station will change or destroy habitat. Adult and juvenile Lake Sturgeon are monitored to see how many adults are spawning and if juveniles born in the wild are helping to increase the populations.

During 2018, 235 Lake Sturgeon (132 adults) were caught in the future Keeyask reservoir (currently Gull Lake), 18 of which were expected to spawn in the current year (adult Lake Sturgeon do not spawn every year). Biologists used this number to estimate there were 820 adult Lake Sturgeon in the future Project reservoir in 2018. Annual survival (the percentage of fish that survive from one year to the next) in this area was estimated at 91 per cent, which is high. Overall, the estimate shows the population in this area has increased. In Stephens Lake, 241 Lake Sturgeon (173 adults) were caught and 32 were expected to spawn in the current year. For the first time, there were enough sturgeon recaptured in Stephens Lake to generate a population estimate. The Stephens Lake population in 2018 was estimated at 296 individuals, with an annual survival rate of 94 per cent. Like the future Keeyask reservoir, the population estimate shows that the number of fish in Stephens Lake has increased since monitoring began in 2001.

Juvenile Lake Sturgeon are typically between one and ten years old and less than 800 millimetres in length. In 2018, juvenile population monitoring took place in the Upper Split Lake Area, the future Keeyask reservoir and Stephens Lake. A total of 63 juvenile sturgeon of different ages and sizes were found in the Upper Split

Tyler Kitchekeesik (TCN) holds a juvenile lake sturgeon from Stephens Lake September 2018



Leslie Flett (TCN) holds a YOY Lake Sturgeon caught on Gull Lake





Weighing a Lake Sturgeon

Lake Area, including one fish raised in the Grand Rapids Fish Hatchery and stocked as a one-year-old in 2014. A total of 143 juveniles were caught in the future Keeyask reservoir, including one YOY and 17 hatchery raised fish ranging in age from one to four years old. In Stephens Lake, 71 juveniles were caught, including 17 hatchery raised fish. The continued presence of YOY and hatchery raised fish indicates that Lake Sturgeon continue to successfully reproduce in the wild and hatchery fish are surviving in the wild. For the first time, captures of juvenile fish were high enough that a

computer model could be used to generate estimates of population size and survival for wild, juvenile Lake Sturgeon in the future Keeyask reservoir and Stephens Lake.

In 2018, the future Keeyask reservoir population was estimated at 4,133 juvenile Lake Sturgeon. Survival in this area was estimated at 77 per cent. The Stephens Lake population was estimated at 1,101 juvenile Lake Sturgeon and survival was estimated at 88 per cent in 2018.



Darcy Wastesicoot (YFFN) with a juvenile Lake Sturgeon caught in the Upper Split Lake Area

Lake Sturgeon Stocking

The Partnership committed to produce hatchery reared Lake Sturgeon for release (stocking) into the Burntwood River, the future Keeyask reservoir (Gull Lake) and Stephens Lake until self-sustaining populations are achieved. Stocking is underway and alternates annually between the Burntwood and Nelson rivers. Each year, wild spawning male and female Lake Sturgeon are captured and held at a river-side spawn camp. The milt (sperm) and eggs are collected and mixed to produce fertilized eggs. These eggs are taken to the Grand Rapids Fish Hatchery, where they are cared for. As the space available to rear fish is limited, as many fish as possible are kept in the hatchery to grow for up to a year, before being released back into the river from which their parents came.

A total of 739 one-year-old Lake Sturgeon (yearlings) were released into the Burntwood River in 2018. On May 31, 362 yearlings were stocked from shore at the Orr Creek boat launch. An additional 377 yearlings were stocked by boat downstream of First Rapids on June 7. The remaining 20 Lake Sturgeon yearlings were stocked from shore at the Orr Creek boat launch during a ceremonial release event organized by the Kischi Sipi Namao Committee (KSNC) on June 7.



Lake Sturgeon yearlings being released into the Burntwood River in June 2018



TCN members look at Lake Sturgeon prior to stocking in the Burntwood River June 2018



Spawn camp pools at Birthday Rapids May 2018



Tyler Kitchkeesik (TCN) fertilizing Lake Sturgeon eggs with Leslie Flett (TCN) at Birthday Rapids May 2018

In the spring of 2018, milt and eggs were collected from four males and one female captured in the Nelson River downstream of Birthday Rapids. Approximately 202,000 eggs were fertilized of which 58,000 were released at Birthday Rapids due to space constraints at the hatchery. Of the approximately 144,000 fertilized eggs transported to the hatchery, about 124,765 larvae hatched, which is an 86 per cent (high) hatch success rate. Following egg collection, recovery of the female



A fingerling prior to release at the Butnau Marina September 2018

was closely monitored. Prior to release, the female was implanted with an acoustic tag, which was detected at different locations, multiple times, during the summer and fall, indicating she recovered from the spawn taking procedure.

While larval (one month old) sturgeon were previously stocked as space became limiting at the hatchery, new provincial virus testing protocols require that fish be at least nine weeks old before they can be tested, so this prevented stocking larvae in 2018. Fingerlings were stocked in the Keeyask area on September 26 (958 fingerlings were stocked into Stephens Lake) and on October 10 (933 fingerlings were stocked into the future Keeyask reservoir). On September 28, the Kischi Sipi Namao Committee held a stocking event at the Butnau Marina, where youth, elders and community

members from TCN and FLCN released 51 fingerlings into Stephens Lake. A total of 803 Lake Sturgeon fingerlings were kept at the hatchery over the winter and will be stocked into the Keeyask area in the spring of 2019.



A fingerling being released at the Butnau Marina stocking event September 2018

Fish Movements

Fish movements are being studied to find out if fish are avoiding the Project construction area and if fish are moving over Gull Rapids during construction in order to live their life. Movements are tracked using acoustic tags surgically implanted inside the fish. These tags send out a unique signal called a “ping”, which is detected and recorded by over 50 devices (called acoustic receivers) placed in the Nelson River between Clark Lake and the Limestone reservoir. By looking at the “pings” recorded by receivers in different places,

the movement of each tagged fish can be followed. Over 200 fish are currently being tracked. The group of tagged fish is made up of both adult and juvenile Lake Sturgeon, Walleye and Lake Whitefish.

So far, monitoring show that each Lake Sturgeon has a place where it likes to live and most do not move great distances. At times, adult sturgeon may move to a different place, most often during the spawning period. Construction at Gull Rapids does not appear to have affected the movements of adult sturgeon and many continue to use the area just upstream and downstream

from Gull Rapids. The majority of juvenile Lake Sturgeon tagged in Stephens Lake were detected at some point near the base of Gull Rapids. Most spend the open water period in that area, which could make them more vulnerable to construction effects such as sediment. In contrast to the adults, juveniles tagged in Gull Lake do not use the area close to the rapids/construction.

During construction, Walleye and Lake Whitefish tagged in Gull Lake have not used the area immediately upstream of Gull Rapids near the construction site. Many Walleye and Lake Whitefish tagged in Stephens Lake continue to use the area at the base of Gull Rapids, including during the spawning period for both species, but they do not appear to be disturbed by construction.

Six adult Lake Sturgeon moved downstream through Gull Rapids since 2014, the year construction began. No juveniles have moved downstream. There was an increase in the number of Walleye that moved downstream during the last three years, which is believed to be due to stress on the fish from the tagging surgery and very high flows on the Nelson River in 2017. Only five Lake Whitefish moved down through the rapids since monitoring began in 2015 (one of which is suspected to be due to tagging stress).

Since 2011, six adult Lake Sturgeon and a single Walleye (tagged in 2013) moved upstream through Gull Rapids. All of the upstream movements took place prior to construction and no other fish have moved upstream since. In August 2018, the river channel was completely blocked off and the Spillway was opened for the first time. Because of this, fish are no longer able to move upstream through Gull Rapids.

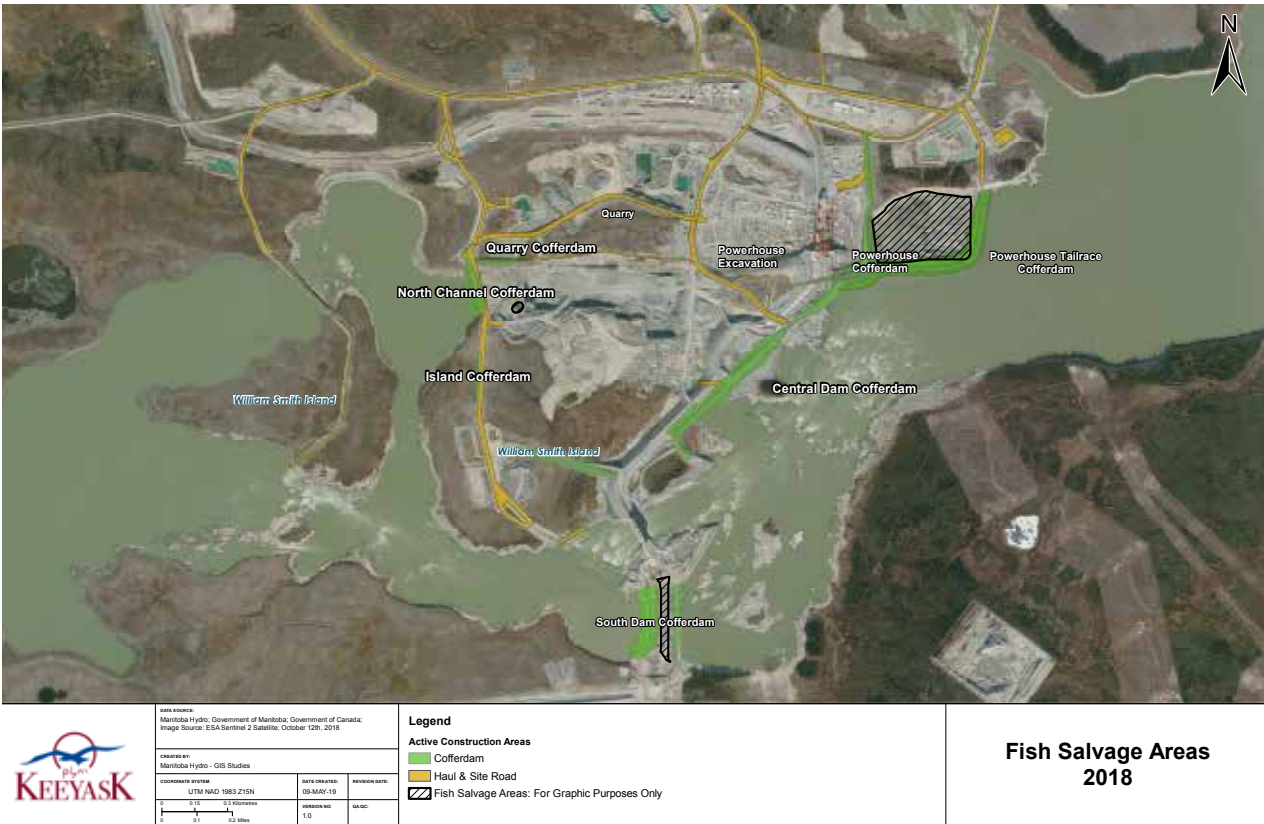


A Walleye after undergoing tagging surgery

Fish Salvage

Areas that become isolated from the river by cofferdams have the water pumped out so Project structures can be built in the dry and areas can be excavated. Before all of the water is pumped out, fish must be captured and released back into the Nelson River.

In 2018, there were three locations where fish were found. In spring, there was a shallow pool of water remaining downstream of the North Channel Cofferdam. In this area 29 fish were captured. The cofferdam that surrounds Keeyask’s future tailrace was pumped out and a large fish salvage operation took place in the summer. Over 21,000 fish were salvaged from this area, most of which were Johnny Darter and Troutperch. There were larger fish found; the most prevalent being Northern Pike. At the end of September, the South Dam Cofferdam was dewatered and 1175 fish were captured. Emerald Shiner made up the vast majority of the catch from this area. All of the fish saved from the three areas were released to the river safely away from construction activities. Since the start of construction, over 100,000 fish were salvaged from dewatered areas. No Lake Sturgeon were found during any of the fish salvage activities.



Fish Salvage Areas
2018



Terrestrial Habitat and Plants

Terrestrial habitats are the areas of land where plants and animals live. There is a constant effort to reduce the effects on the land during construction of the Project. The land is being monitored to check the Project effects on plants and soils in the area.

Sensitive Sites

One of the ways Project effects are being minimized is by making sure environmentally sensitive sites are not disturbed during clearing or other Project activities. Sensitive sites include types of habitat that are rare or uncommon in the Keeyask region, valued by people, or very important to wildlife such as marsh wetlands or caribou calving islands. Before any clearing occurs, there is a walk-through with the contractor and environmental site staff. Purple flagging tape is used to clearly mark all areas that are not to be disturbed. As of September 2018, only three per cent of the total sensitive site area had been cleared or disturbed, which is similar to what was expected during the Project assessment



Purple flagging at a sensitive site



View of the cleared Ellis Esker borrow area and its winter access road

Habitat Loss

Habitat loss is being monitored to verify Project effects from clearing or other construction disturbances. Monitoring showed that approximately 5,640 hectares of terrestrial habitat was cleared or disturbed for the Project as of September 2018, which is less than half of the land area in the overall Project footprint. Most (about 75 per cent) of the clearing that happened between September 2017 and 2018 was in the future reservoir area, with much of the remaining clearing done for the new Ellis Esker borrow area and its winter access road. The amount of land cleared so far by the Project is less than what was estimated during the Project assessment.

Rare Plants

During each year of construction, surveys for rare plants occur before clearing new areas for the Project. When rare plants are found, they are photographed, flagged, and their locations are recorded. Whenever possible, these locations are protected from Project disturbance.

In 2017, pre-clearing surveys in the Ellis Esker borrow area and access road corridor found over 30 Scheuchzeri's cotton-grass plants, which are considered rare in Manitoba. In July 2018, additional rare plant surveys were conducted near the access road corridor and within the surrounding region, to see if this species is more common than first thought. No other sites with this cotton-grass were found during monitoring surveys in 2018, and monitoring also confirmed that the sites found in 2017 were not disturbed by the clearing or traffic on the access road to the Ellis Esker borrow area. No additional clearing is planned for this road corridor.

A very rare plant in Manitoba, elegant hawksbeard, was found growing at three locations in Borrow Area B-6 during other plant surveys. As this borrow area was no longer active, these plants were not disturbed by any construction activities.



Elegant hawksbeard plant growing in Borrow Area B-6 in 2018



Clean-up of diesel spill in tailrace area

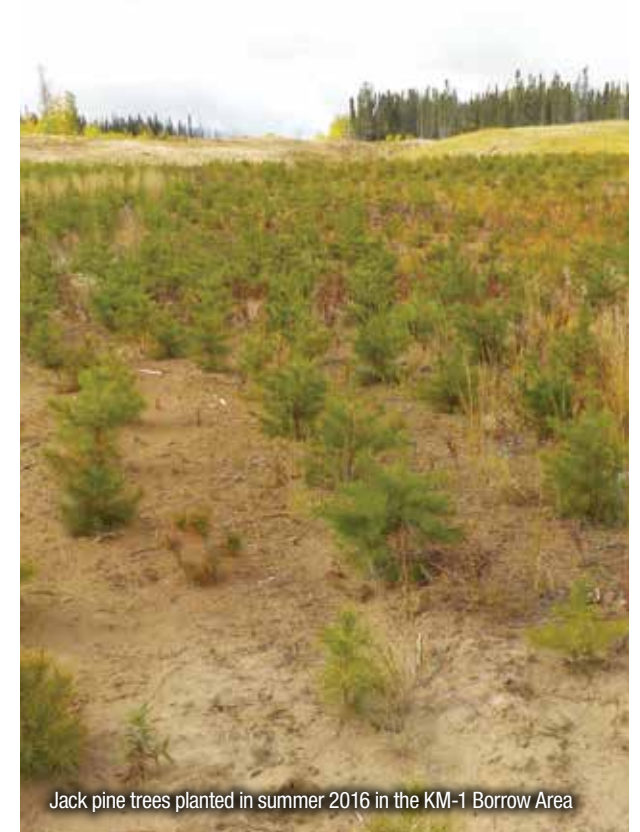
Spills in Disturbed Areas

Another way to reduce construction effects on the land is by having hazardous materials spill response plans in place to provide guidelines for spill prevention and responses to hazardous materials spills, including reporting and clean-up requirements for spills. At Keeyask, all spills, regardless of quantity, are reported and cleaned up. Between April 1, 2018 and March 31, 2019, there were 12 externally reportable releases

based on regulation and 12 that were reported for information purposes based on the quantity of material released, but do not have defined reportable quantities under regulation. At each spill site, the contaminated material was removed and soil or water samples were collected to ensure regulatory guidelines were met during clean-up activities.

Vegetation Rehabilitation

The Partnership is committed to rehabilitating areas disturbed by construction that are not required for Project operation. Rehabilitation includes planting trees, grasses and traditional plants native to the area, as well as assisting natural plant regrowth. The first efforts to help restore forest habitat were implemented in 2016 when jack pine and black spruce seedlings were planted in areas no longer being used by the Project. During other plant monitoring in 2018, it was noted that most of the planted areas are doing very well. Tree planting will continue in 2020.



Jack pine trees planted in summer 2016 in the KM-1 Borrow Area

Wetlands

Wetlands are areas where the ground is either wet or often under shallow water. Wetlands are important as they provide habitat for some plants and animals are used as hunting areas for moose and waterfowl. Some medicinal and food plants used by the partner First Nations, such as tamarack and sweet flag (wekes, wekas or wihkis in Cree), are found in wetlands. Ninety per cent of the Keeyask region is made up of wetlands; however, the marsh type of high quality wetland is rare. Marshes are surrounded by plants such as grasses and cattails, rather than trees.

In September 2018, 42 wetlands within one kilometre of the existing Project footprint were surveyed by helicopter. Eight wetlands were also surveyed on the ground. To date, there were no unanticipated impacts on the wetlands being monitored. Erosion control or other mitigation measures have been recommended where potential future risks to marsh wetlands were identified near Project construction.

A 12 hectare marsh wetland will also be constructed near the Project site to replace the marsh habitat being removed by Project development.

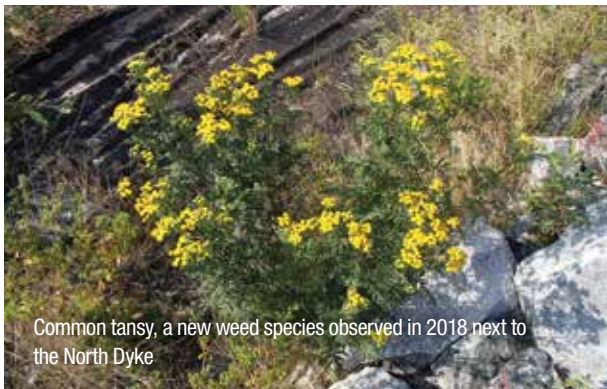


A marsh wetland near the Project site being monitored during construction

Weeds

Weeds are plants not naturally found in a region, with the potential to spread into native ecosystems. Weeds are of concern because once they are introduced into newly disturbed areas they can spread quickly and may crowd out native plants. Surveys are being done to determine how Project construction is affecting the type of weeds growing, how many are present, and to help decide what needs to be done to control them.

In 2018, weed surveys were carried out within most of the cleared Project areas. As expected, some weeds continued to spread within these areas; however, weeds still cover a very small portion (less than one per cent) of the cleared areas. One new weed species, common tansy, was observed for the first time in the Project footprint, and was removed and disposed of immediately. This immediate removal was found to be a highly effective method of controlling new weeds, so this measure will be continued. Herbicides were also applied in a few key areas in late July 2018. This treatment was effective in reducing weed cover in these areas. Ultimately, vegetation rehabilitation of temporary Project areas will greatly reduce the distribution and abundance of weeds.



Common tansy, a new weed species observed in 2018 next to the North Dyke



A patch of weeds before (above) and after (below) herbicide application in a work area in July 2018

Birds

There are more than 120 different bird species found at or near the Project. Observations of birds at the Project site are noted by environmental site staff and other Project workers. In 2018, bird sightings at the Project site included Canada goose, common nighthawk, raven, bald eagle, gull, mallard, pelican, ptarmigan, American kestrel, red-tailed hawk, robin, sandhill crane, sandpiper, sharp-tailed grouse, spruce grouse, snowy owl, swan, tern, northern hawk owl, bank swallow, tree swallow, rusty blackbird, northern harrier, norther flicker, and snow bunting.

Pre-Clearing Nest Surveys

Most Project clearing is scheduled outside of the breeding bird nesting period (between April 24 and August 25) to minimize effects on breeding birds. If clearing is required during the breeding bird nesting period, pre-clearing nest surveys are conducted. Two pre-clearing nest surveys took place in 2018. One active common raven nest was found outside of the proposed clearing area in one location. A thirty metre buffer was established around this nest; clearing within that buffer was not permitted. The majority of Project clearing is now complete. Project clearing is now complete.



A raven's nest found in a forested area searched during a pre-clearing nest survey in 2018

Gulls and Terns

Protection

Since 2014, a gull and tern control program has been in place to help discourage gulls and terns from nesting in active construction areas. The control program helps to protect workers, birds and eggs, as well as prevent property damage caused by nesting gulls and terns. Falconry, the use of trained birds of prey (raptors) to chase other birds, was used as the main control method. By flying the raptors in certain areas of the Project site where nesting by gulls and terns could cause damage or danger, the gulls and terns are encouraged to look elsewhere for safe nesting areas.



A Harris's hawk in the gull and tern control area

In 2018, the gull and tern control program ran from April 26 to July 8, and was successful at preventing birds from nesting in unsafe construction areas. Under an Environment Canada permit, two ring-billed gull nests, two herring gull eggs and one herring gull nest were removed from the active construction area. No gulls or terns were killed by raptors during the control program.



<small> Project Name: Manitoba Hydro, Government of Manitoba, Government of Canada, World View 2 Satellite Imagery (©2018 Carto September, 2017) </small>			
<small> Client: Manitoba Hydro - GIS Studies </small>			
<small> Coordinate System: UTM NAD 1983 21N </small>		<small> Date Created: 14 FEB-18 </small>	<small> Revision Date: </small>
<small> Scale: 1:10,000 </small>	<small> Version: 1.0 </small>	<small> Author: </small>	

Legend
 Area Within 200m of Active Construction/Gull and Tern Control Area
 Active Construction Areas
 Cofferdam
 Haul & Site Road

2018 Bird Control Area

Monitoring

The number and locations of ring-billed gulls and common terns in areas expected to be affected by the Project and in areas away from the Project were monitored by helicopters and drones in June and July of 2018.

The drone survey found that similar numbers of gulls and terns used habitat in Gull Rapids compared to previous years of construction (2015 to 2017) and successfully nested in 2018. Project construction did not appear to disturb these colonial nesting waterbirds in this area. The number of chicks observed at Gull Rapids in 2018 was lower than what was observed in 2016. The reason for this is unclear, but could be attributed to nest timing or food availability.

Helicopter surveys of the broader Keeyask region showed the number of nesting gulls and terns was similar compared to before construction began. During these surveys it was observed that the American white pelican appears to be increasing in numbers within the region, as also observed by the partner First Nations.



Mitigation

To mitigate the loss of gull and tern nesting habitat at Gull Rapids due to the Project, alternate gull and tern nesting habitat was created. An area on the south side of William Smith Island was cleared and developed in 2015 to create new gull nesting habitat during the construction period. To date, the constructed gull habitat area has not been used by gulls for nesting; rather, the gulls have used other available natural habitat for nesting.

To provide alternate nesting habitat for terns during the construction period, floating tern nesting platforms were installed near the Project site in 2015, 2016, and 2017. Monitoring showed that the platforms had limited use during these years and that terns were using other available natural habitat for nesting. The platforms were not re-installed in 2018.

Following impoundment of the reservoir, the gull and tern nesting islands at Gull Rapids will no longer be available. To provide long-term nesting habitat replacement, a permanent island is being constructed in the future reservoir area to provide potential habitat for gulls and terns during Project operation. The island is expected to be completed in mid-2019.



Ruffed Grouse

Ruffed grouse are year-round residents at the edge of their range in the Keeyask region. Aspen forest or mixed spruce forest with a large proportion of aspen is preferred habitat for breeding. This type of habitat was limited around the Project site before Project construction began and much of this habitat was temporarily removed by forest fires in 2013. The objectives of ruffed grouse monitoring is to determine how much suitable habitat for ruffed grouse still exists, get an understanding of how many birds are present, and to determine if there has been any Project-related mortality.





The first year of construction monitoring for ruffed grouse began in 2018. In early May, automated recording units were placed at 22 sites in the Keeyask region, from the Split Lake area to the Long Spruce Generating Station. Roadside surveys for ruffed grouse were also conducted at 54 sites along the North Access Road, South Access Road, and PR 280. Males drum by standing on a log and beating their wings to attract a mate. Ruffed grouse drumming was recorded at six of the 22 sites in 2018, but no ruffed grouse drumming was heard during the roadside surveys. No reports of Project-related ruffed grouse mortality have been made to date. Monitoring will continue in 2020 to learn more about ruffed grouse in the Keeyask region.

Bank Swallows

Bank swallows are a priority bird for Project monitoring because they are now designated as Threatened under the federal Species at Risk Act. The main focus of the bank swallow study is to confirm their presence and distribution in the Project area. This was the second year of Project monitoring during construction.

Helicopter surveys looking for bank swallow colonies were carried out in the Keeyask region in June 2018. Bank swallows and nest burrows were counted and photographs were taken to confirm the counts. Most sites were re-visited by boat in June and July. All 16 of the bank swallow colonies identified in 2016 were surveyed again in 2018 and 12 were found to be active. Six new colonies were also found. It is estimated that there are over 2,200 breeding pairs in the Keeyask region (a 13 per cent increase over 2016 survey numbers). Most of the colonies were found in steep banks on the shorelines of the Nelson River and four colonies were observed in recently developed Project borrow areas.



Wildlife

There is an abundance of wildlife in the natural areas surrounding the Project. Wildlife interactions within the Project site are monitored on a daily basis by the environmental site staff and other construction staff. Observations of wildlife at site in 2018 included arctic fox, black bear, beaver, caribou, ground hog, lynx, marten, moose, muskrat, otter, red fox, snowshoe hare, wolf, wolverine, boreal chorus frog and wood frog. To reduce wildlife attraction to the Project work areas, food waste is disposed of in wildlife-proof containers. As well, kitchen waste areas are surrounded by fences to limit access by wildlife. Project staff is reminded of the importance of not feeding wildlife and educational posters are up around the construction site.



Caribou observed near construction site



Boreal chorus frog observed on site



Black bear wandering near construction site

Bears

Bear Relocations

Despite actions taken to reduce attractants to the Project site, bears are still sometimes present and pose a safety concern. Bear traps are set in consultation with the local Conservation Officer. In 2018, one bear re-location occurred in September by the local Conservation Officer. The bear was released about 40 kilometres away from the Project site.

Bear Den Surveys

Black bears use dens for birthing, caring for young, and hibernating. Bear den surveys take place when the timing of planned Project clearing overlaps with den use. If any active dens are found during surveys, a marked buffer of 100 metres is established around the den to protect the animals.

In 2018, den surveys were conducted during the fall and winter in areas where clearing was required. Areas searched included borrow areas, excavated material placement areas, and the Powerhouse Tailrace. Surveys focused on areas with habitat types that had higher potential to be selected by bears for denning, such as forested areas. No active black bear dens were found during the 2018 survey.

Bats

Little brown bats are designated as an endangered species in Manitoba. Monitoring is being done to see if there is a little brown bat population in the immediate Project area. Bat surveys, using a bat detector, took place during the night in late July 2018. No bats were detected during the 2018 surveys (as was the case in 2016 and 2017) and no bat observations have been reported to date during Project construction. No further bat monitoring is planned for the Project.



Bat detector used to listen for little brown bats

Beaver and Muskrat

Monitoring

Beaver and muskrat are important species in the Keeyask region, as they have cultural, economic, and ecological value. The Project has the potential to affect beaver and muskrat populations through loss and change to habitat, as well as disturbance from construction activities – including noise and lights. Monitoring is being done to confirm predicted Project effects.

A helicopter survey was done in the spring of 2018 to estimate the number of push-ups (muskrat houses) in the Project region. In total, 105 muskrat push-ups were counted at 40 locations, with five located within the future reservoir area. The regional density of muskrat push-ups was lower in 2018 compared to those observed during pre-Project surveys in the early 2000's, and had decreased by 55 per cent from 2006 to 2018. The decrease could indicate a smaller regional population is now present.

A helicopter survey was done in the fall of 2018 to see how many beaver lodges were present in the future reservoir area and the surrounding Project region. A total of 316 lodges were counted in the region, 143 were occupied by beaver. While the number of lodges within the future reservoir area has decreased since the start of Project construction, from 34 to 4 (likely due to both reservoir tree clearing and ongoing trapping efforts), the regional density of active lodges remains close to that from pre-construction surveys.

Mitigation

As the future reservoir impoundment will flood habitat for these species, beaver and muskrat are being humanely trapped from within the future reservoir area to reduce the winter mortality that would likely occur. This mitigation measure is intended to minimize the distress of these animals by removing them prior to flooding.

In fall 2018, four active lodges were found within the future reservoir area – two on the north side of the river and two on the south side. The third year of beaver and muskrat trapping within this area took place from January to March 2019. Trapping was carried out by the Registered Trapline (RTL) 15 holder and two helpers, members of one of the partner First Nations. This year, traps were set at the four active lodges, and a total of six beaver and five muskrat were trapped out. Trapping efforts will continue next winter, prior to reservoir impoundment.



Beaver lodge observed during aerial survey in fall 2018



Setting beaver traps within the future reservoir area

Caribou

Three migratory caribou herds (two coastal caribou herds and occasionally a barren ground herd) can be found in the Keeyask region in winter. A small number of caribou stay near Keeyask in the summer to calve (referred to as summer resident caribou). Two separate monitoring studies took place for caribou in 2018, one focused on the summer resident caribou and the second on the winter caribou numbers.

Summer Resident Caribou Sensory Disturbance

Sensory disturbance studies took place in 2018 to see if the noise and light from Project construction are affecting caribou use of summer calving habitats (islands in lakes and mainland habitat).

The study used trail cameras and ground tracking on islands in lakes (126 cameras; 122 ground tracking transects), on mainland habitat (32 cameras; 188 transects), and along the Project access roads (18 transects) to record caribou and other large mammals. Ground tracking took place in April, July, and September and the trail cameras were in place from April to September.

Caribou were found on just over half (54 per cent) of the islands in lakes surveyed in 2018. During the pre-construction period (2010 to 2014), the percentage of islands with caribou declined. The trend continued in 2015 to 2018 and also included islands further away from the Project site.

Caribou were present on two-thirds (66 per cent) of all surveyed mainland habitat areas, 19 per cent of which also had calves. Overall, caribou activity was lowest in the mainland habitats closest to the Project.



Trail camera photo of a caribou, taken on an island in Stephens Lake in 2018

On transects next to access roads, the density of caribou signs was greater beyond two kilometres from the access roads than within two kilometres. No calf signs were found within two kilometres of the access roads and there was also very little calf activity in areas further from the roads.

Caribou - Winter Population Survey

To learn more about the caribou numbers and where they are found near Keeyask during the winter, an aerial survey took place in late February 2019, when large numbers of migratory caribou had moved into the Keeyask region. These caribou were from the Southern Hudson Bay subpopulation (formerly known as the Pen Islands herd). Similarly high caribou numbers were reported by local resource users in winter 2017-18. Prior

to this, large numbers of caribou had not been seen in the Keeyask area during the winter since early 2013, when 13,984 caribou were estimated to be in the area. This shows that caribou use of the Keeyask region is variable, similar to before Project construction started, and is difficult to predict year-to-year.

The 2019 survey was done within the Keeyask region, between Split Lake and Gillam. A total of 3,684 caribou in 280 groups were counted during this survey. Using a population model, the number of caribou in the survey area in late February was estimated to be 6,665. Most caribou were seen in the southern part of the survey area, mainly between Gillam and Atkinson (Fox) Lake, and south of York Landing. Track densities were high throughout the survey area, except for the northeast portion, showing a high amount of winter



Caribou observed during the aerial survey in February 2019

use in the Keeyask region. Caribou tracks showed crossing sites on the Nelson River between Clark Lake and Gull Rapids, but no crossing sites were seen on Stephens Lake.

Keeyask Caribou Coordination Committee

The Keeyask Caribou Coordination Committee (KCCC) includes members from TCN, WLFN, YFFN, FLCN, and Manitoba Hydro and is a sub-committee of the Monitoring Advisory Committee. In 2018-19, the KCCC met in May and October 2018, and January 2019, to share information on caribou in the Keeyask region and discuss the caribou monitoring being done for the Project.

In October 2018, two representatives from the KCCC attended the North American Caribou Workshop in Ottawa and presented a poster on the committee and how the Partnership is working together to monitor Project effects on caribou using both traditional knowledge and technical science.

The winter of 2018-19 was the second winter in a row that relatively high numbers of migratory caribou from the Southern Hudson Bay subpopulation (formerly the Pen Islands herd) were observed moving through the Keeyask region, with many partner First Nations community members participating in successful harvest activities. There was concern voiced about harvesters from other communities coming into the area to harvest caribou. Concerns relate to the large number of animals being harvested; hunters failing to



A local caribou swimming from an island in July 2018

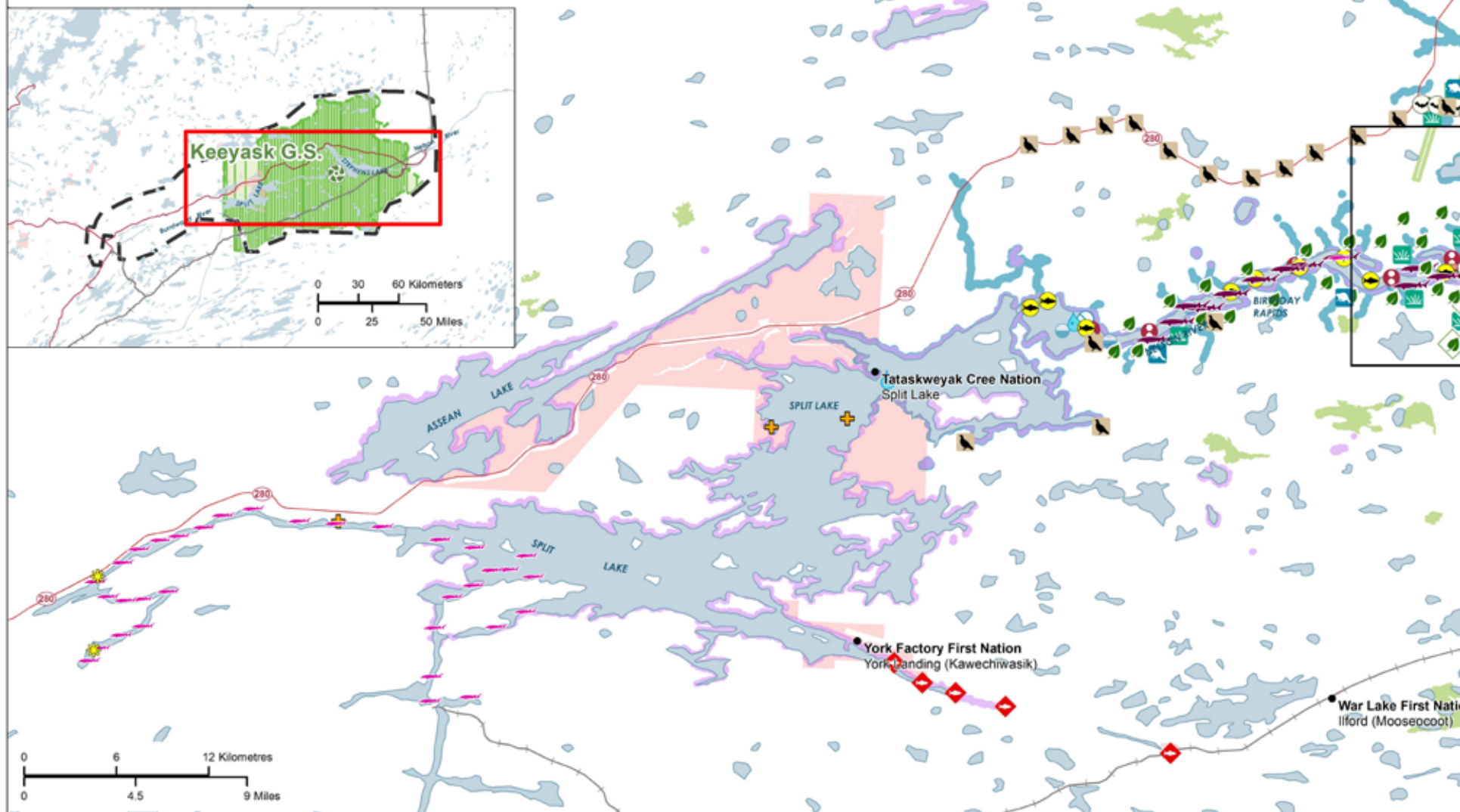
follow traditional protocols for accessing traditional lands; carcasses being left with only small amounts of meat taken; and safety hazards associated with gut piles being left on access routes. KCCC members discussed what could be done to manage this in the future. There was also a lot of discussion among committee members about the importance of working towards a co-management approach for caribou in northern Manitoba, with efforts to coordinate a broader community workshop outside of the committee to move this forward.



KCCC member Jimmy Lockhart (FLCN) presents a poster at the North American Caribou Workshop in Ottawa

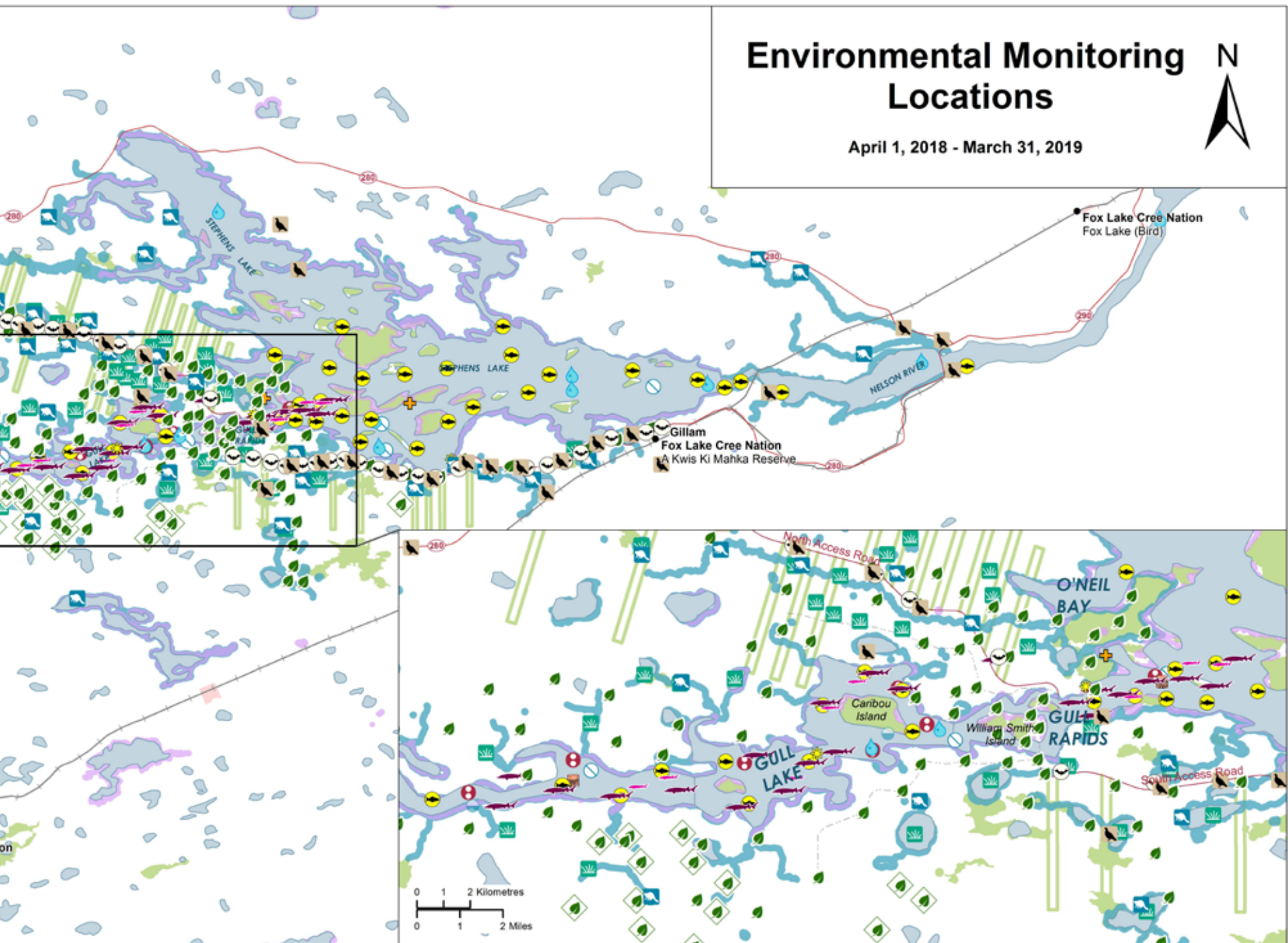
Sample / Survey Type

Sediment Deposition	Fish Movement	Plant	Bird (Shoreline)	Benthic Invertebrate
Total Suspended Solids	Lake Sturgeon Stocking	Plant Mercury	Beaver Lodge	Keeyask Region
Turbidity	Fish Mercury	Wetland	Beaver \ Muskrat (Shoreline)	Highway / Access Road
Water Quality	Juvenile Sturgeon	Bat	Caribou (Ground)	Rail
Water Level	Adult Sturgeon	Ruffed Grouse	Caribou (Aerial)	First Nation Reserve



Environmental Monitoring Locations

April 1, 2018 - March 31, 2019



Financials

Partnership Assets, Liabilities and Equity (as at March 31)

(in millions of dollars)	2019	2018
<hr/>		
Assets		
Construction in progress	5,497	4,292
Current Assets	7	8
Intangible Asset	159	109
	5,663	4,409
<hr/>		
Liabilities and Equity		
Long-term Debt	4,018	3,080
Current Liabilities	256	235
Long-term Liabilities	102	103
Partners' Capital	1,287	991
	5,663	4,409
<hr/>		

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

(in millions of dollars)	2019	2018
Financing Activities		
Proceeds from Partners' contributions	296	250
Net proceeds from long-term debt	938	780
	1,234	1,030
Investing Activities		
Generating station	(1,184)	(997)
Transmission line	(50)	(33)
	(1,234)	(1,030)

Partners' Capital (for the year ended March 31)

	Class	Units	Capital 2018	Contributions (in millions of dollars)	Capital 2019
Manitoba Hydro	M	7,499	817	245	1,062
General Partner (5900345 Manitoba Ltd.)	M	1	-	-	-
Cree Nation Partners Limited Partnership	K	1,050	104	31	135
	E	450	-	-	-
Fox Lake Cree Nation Keeyask Investments Inc.	K	350	35	10	45
	E	150	-	-	-
York Factory First Nation Limited Partnership	K	350	35	10	45
	E	150	-	-	-
		10,000	991	296	1,287



Hydropower Limited Partnership



Keeyask Hydropower Limited
Partnership
www.keeyask.com



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