**The Manitoba Clean Environment Commission**

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| **In the matter of:** | Manitoba-Minnesota Transmission Project Environmental Impact Statement |
| **Submitted by:** | Manitoba Hydro |
| **Date:** | June 16, 2017 |

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# Final argument

# Manitoba Hydro

## Introduction

The Manitoba Minnesota Transmission Project was planned and assessed by Manitoba Hydro in collaboration with local experts, communities potentially affected by the Project, and with consideration of those that live and work in the area. Those involved in planning of the Project are proud to put forward the route before you, which builds upon the many voices heard through inclusive and meaningful engagement and in recognition of the importance of traditional territories in southern Manitoba.

Through this hearing, Manitoba Hydro has shared how detailed knowledge about the southern Manitoba landscape was collected and analyzed within a routing process in the most transparent manner ever seen by an experienced routing professional. We have shared how the understandings gained from thousands of conversations held with people have influenced the Project before you. And we have shared how we plan, continue to listen and learn through inclusive and adaptive monitoring and how we will address concerns in a manner that builds benefits where there are opportunities.

Over the course of the hearing you have heard a broad range of testimony demonstrating the significant challenge before Manitoba Hydro as we worked to "thread the needle" with this route between land types and the sometimes competing perspectives of the wide variety of land users in the Project area. We'd like to take this opportunity to share how Manitoba Hydro faced that challenge, explain how consideration of any one perspective in isolation would result in a much different, more impactful route, and outline our commitments. Manitoba Hydro is providing this summary of information in order to assist the Clean Environment Commission in their deliberations and subsequent recommendations.

Electricity use in Manitoba is projected to grow over the next two decades, with new sources of electricity needed to support this growth by 2023. To meet this need, Manitoba Hydro is continuing to invest in hydroelectric generation. Manitoba Hydro has identified a development plan that provides an adequate supply of electricity that meets all firm domestic load requirements. In addition, the recently approved Keeyask Generation Project will result in an initial surplus of power being available for export. This Project will increase transmission capacity between Manitoba and the U.S., creating sales revenue and enhancing reliability of supply. The Project will therefore support future export-power sales and current electricity sale commitments. The Project is required to

- Export power to the United States based on current sales agreements;
- Improve reliability and import capacity in emergency and drought situations; and
- Increase access to markets in the United States.

In planning a project to support this need Manitoba Hydro has pursued approaches for engagement, routing and assessment that are best suited to the landscape of southern Manitoba and those people and communities it supports.

This document is organized into three parts:

Part I describes the key themes heard during the proceedings of the Clean Environment Commission hearing, including a description of:

- Early, responsive, and ongoing engagement processes.
- A routing process based on years of input and data that sought to balance perspectives, importantly those of private landowners and the First Nations and Metis communities.
- Thorough Environmental Assessment that was transparent, inclusive, informed and meaningful.
- Manitoba Hydro's commitment to ongoing learning and communication.

Part II describes some of the key points raised by each Participant in the hearing, and summarizes the evidence put forward by Manitoba Hydro in response to these points.

Part III outlines the commitments that Manitoba Hydro has made in the Environmental Impact Statement (EIS) and through the Information Request Process (Appendix A), reviews recommendations made by Participants for specific license conditions (Appendix B), and provides Manitoba Hydro's response to these recommendations. Concerns raised by public participants through the CEC hearing are also summarized, along with a discussion of how Manitoba Hydro has or will address these concerns (Appendix C).

# I. A meaningful, transparent, informed and inclusive assessment

At the onset of designing this Project, Manitoba Hydro staff adopted a 'learning' mindset. Well positioned to draw upon recommendations from past hearings, such as the Bipole III Transmission Project and Keeyask Generating Station Project, the Project team recognized the opportunity before them to develop an improved environmental assessment methodology, to apply an innovative routing process, and to initiate a more inclusive and responsive engagement process earlier in the assessment timeline.

**Environmental assessment**

The hallmarks of good environmental assessment practice are described by the International Association of Impact Assessment (IAIA) and, most recently, were put forward in an April 2017 advisory report by the Expert Panel for the Review of the Environment Assessment Processes entitled 'Building Common Ground – A New Vision for Impact Assessment in Canada'[1]. Both indicate effective assessment should be characterized by inclusive and meaningful engagement, transparency in decision making and process, and should be based on unbiased, adequate, relevant and accessible information about impacts and concerns. Dr. Fitzpatrick drew from the April 2017 advisory report when she described how effective environmental assessment must be governed by four fundamental principles, including: transparency, inclusiveness, informed decisions, and meaningful engagement. Manitoba Hydro agrees, and in fact, used the above noted principles to guide this assessment (Chapter 3, 4, MMTP EIS).

## Transparency

Manitoba Hydro recognizes that trust is built when people and communities feel heard, they understand how decisions are made and the process used to make decisions is clear and rational. Routing a transmission line and preparing an environmental assessment are two technically complex tasks. Examples have been shared over the course of the hearing that demonstrate the efforts made to understand concerns, how those concerns influenced decisions, and how the outcome of key decisions were shared throughout the planning process.

Priority was placed on selecting a routing process that clarified decision making and provided transparent rationale, as recommend in the Bipole III CEC report (recommendations 7.1, 7.2). Beyond selecting a method characterized by clearly defined model parameters, step by step process descriptions were shared through each round of engagement and detailed working meeting notes were included within the EIS. Jesse Glasgow, a routing professional who has worked on hundreds of projects, describes the level of transparency when he stated:

> *"The MMTP project was among the most rigorous and transparent implementations of the*

[1] *Government of Canada. Expert Panel Report Building Common Ground: A New Vision for Impact Assessment in Canada. See https://www.canada.ca/en/services/environment/conservation/assessments/environmental-reviews/environmental-assessment-processes/building-common-ground.html*

*methodology to date. It included as extensive public engagement and transparent documentation of any project with which I have been involved." May 10, Page 499*

Transparency was a priority in the engagement processes. Throughout the planning process Manitoba Hydro endeavoured to make the more technical aspects of routing and assessment clear to interested audiences. Plain language documents were created throughout the assessment process and included documents created to invite input on potential valued components for the environmental assessment, Google Earth videos created to provide alternative perspectives to how the route may look across the landscape, and the EIS was summarized in a short, visually appealing document prepared using plain, non-technical language to facilitate easier understanding with a broader audience in mind.

Transparency was also a priority in environmental assessment valued component analysis. The EIS analyzed effects to twelve valued components, and provided clear illustrations of which pathways of effect were assessed and how they interacted with the Project. The rationale for the findings of the EIS were thoroughly described and supported by over 4240 pages of information and supporting materials, and a summary report that described results of the assessment clearly and in plain language.

Manitoba Hydro shared 'what we heard' from participants of the First Nation and Metis Engagement Process (FNMEP) during Environmental Protection Planning (EPP) meetings to make sure what was documented accurately captured concerns. Representatives worked with communities to understand if concerns had been captured by meeting in person to go through tables provided in Appendix 4A of the EIS line by line. Changes were then made prior to filing the EIS if their concerns were not captured correctly. For example, in an October 2016 EPP meeting with Dakota Plains Waypeton First Nation, the information provided in Table 4B-6 was shared, discussed, with Chief Smoke and DPWFN members who agreed that the tabulated information adequately described their concerns.

## Meaningful

Manitoba Hydro representatives sought to engage in a manner that enabled meaningful discussion, recognizing that meaningful engagement may mean different things to different participants. We believe that by providing multiple and varied opportunities for engagement, by providing a welcoming environment in which to share ideas, by asking if what we've heard is correct, and by letting participants know how their information influenced the Project, meaning was imparted. The value placed on inclusion of public and Indigenous knowledge and perspectives began early in Project planning and influenced decision making throughout.

This Project will be located in Treaty One Territory, the traditional territories of the Anishinabe, Cree, and Dakota people and the homeland of the Metis Nation. Manitoba Hydro supported early and broad engagement with communities and organizations who expressed interest in the Project. Self-directed studies identified a common theme about the southern Manitoba landscape. Over the last 150 years the southern Manitoba landscape has changed dramatically. The native ecology has been substantially affected through land conversion to agriculture from which many

Manitobans have benefited, and some have not. Since signing treaties, the amount of available land to practice rights-based activities has dwindled. This dwindling availability goes beyond presenting a logistical impediment; it builds upon existing barriers to practicing culturally-important activities. Although small, the MMTP contributes to further diminishment.

Mitigation measures that work to support a healthy, living right-of-way (ROW) and enable access whenever it's safe to do so have been put forward to support the continued practice of rights-based activities. Manitoba Hydro has further committed to providing clear communication prior to major project milestones and welcomes opportunities to continue discussion with FNMEP participants on the Project, such as through an inclusive monitoring committee. Similarly, Manitoba Hydro will continue to cultivate ongoing communication with landowners through the landowner liaisons and other identified mechanisms to facilitate ongoing and meaningful discussions regarding the Project and its effects.

### Informed

The EIS was prepared to meet the requirements of *The Environment Act* (and Environment Act Proposal Report Guidelines), the *National Energy Board Act* (and National Energy Board Electricity Regulations, guidance for environmental and socio-economic elements in the NEB electricity Filing Manual), and the *Canadian Environmental Assessment Act 2012* (and the applicable regulations and guidelines). The document has adopted a framework for assessment that pulls from both a conventional 'effects assessment' framework used commonly in this province to understand effects, and self-directed studies by First Nations and Metis that use an approach of preference to each community or organization. Thorough descriptions are provided of the Project area, the route determination process, the Project itself, and the potential environmental effects, mitigation, and residual effects. It also includes an assessment of cumulative effects for each VC.

There are other frameworks available to conduct this type of assessment and, in fact, there is a national conversation taking place about the effectiveness of environmental assessment in its current form (http://eareview-examenee.ca/). Where Ms. McHugh proposed an ecosystem services approach to assessment, practitioners involved in the Project, as well as the Consumers Association of Canada, have expressed concerns with adopting this approach. The ecosystem goods and services approach may be offensive to some in that it monetizes ecosystem services, moving assessment even further away from a holistic world view.

Each of the Valued Components (VCs) studied in the EIS were selected and developed based on professional experience, knowledge of typical project effects, knowledge of the project area, regulatory requirements, and available engagement information. In light of learnings and feedback from previous Manitoba Hydro assessments, as well as prior CEC recommendations, the VCs selected were chosen to be broader than in previous assessments to better accommodate an ecosystem approach and better align with the world views of First Nations, Metis and others. On May 9, Manitoba Hydro's Ms. Coughlin noted that

> "*...valued components, and this assessment had 12, and they were a higher level value components. We also looked at higher level metrics that were more in line with the*

*concerns that we heard from those engaged with, and how feedback was considered*." Page 293.

The valued components evaluated in the assessment included:

- Fish and Fish Habitat;
- Vegetation and Wetlands;
- Wildlife and Wildlife Habitat;
- Traditional Land and Resource Use;
- Heritage Resources;
- Infrastructure and Services;
- Employment and Economy;
- Agriculture;
- Land and Resource Use;
- Visual Quality;
- Human Health Risk; and
- Community Health and Well-being.

The assessment of each VC was informed in that it included a robust data collection program covering VC-specific assessment areas that considered the Project and its potential effects as well as the existing environmental conditions. The data collection programs included multiple field surveys and studies, key person interviews, and a thorough review of existing literature, in addition to engagement process feedback. This resulted in a strong assessment focused on the issues that were identified as important to the people and groups that will ultimately be affected. Some of the field study programs conducted included:

- Camera trap studies – multiple season and comparative with M602F;
- Elk breeding surveys;
- Breeding bird surveys – single season comparative with M602F and R49R;
- Aerial winter track surveys – multiple season and comparative with M602F and R49R;
- Vegetation surveys – comparative with M602F and R49R;
- Fish habitat surveys;
- Amphibian surveys - multiple season and comparative with M602F and R49R;
- Helicopter forestry surveys;
- Agricultural surveys for livestock operations;
- Agricultural value study by the Prairie Agricultural Machinery Institute (PAMI);
- Windshield surveys;
- Land value studies (PRA);
- Visual quality surveys for priority viewpoints; and
- Heritage Resource Impact Assessment of potential areas based on predictive modeling.

In conducting the studies necessary to characterize the existing environment for the Project, the EIS incorporated work representing improvements to the state of current practice compared to previous Manitoba Hydro assessments. As a general example, each VC chapter included a section

explaining how learnings from previous assessments were incorporated. Similarly, each VC chapter included an engagement and key issues section, indicating how key issues identified through engagement feedback were incorporated into the assessment of effects. In addition, each VC chapter included an assessment of the sensitivity of the findings to future climate change scenarios, as well as recommendations for follow-up and monitoring for inclusion in construction and post-construction programs.

Some additional specific examples where the MMTP EIS represented improvements, compared to Manitoba Hydro's previous assessments, include:

### *Vegetation and Wetlands*

The amount of traditional use plant information was much greater and was available earlier than in previous projects, particularly the identification of specific plants used and collection areas. Over 300 plants of importance to participants of the FNMEP were identified and included within the assessment (Chapter 10). The provision of this information through the FNMEP was an important piece of information that added value to the assessment.

### *Wildlife*

In addition to input from the engagement processes, feedback and comment was sought from regulators on a number of occasions to confirm and modify the study work plans to be more robust. This resulted in detailed data that would be more suitable for supporting the follow-up and monitoring programs. One of the key advantages provided by Manitoba Hydro's experience and tenure included the ability to assess representative proxy sites (i.e., using M602F and R49R) in addition to studying the final preferred route (FPR), to get a local and representative sense of wildlife use of existing transmission ROWs as well as ungulate use and bird mortality rates along those existing lines.

### *Land Use*

The land use assessment provided a comprehensive analysis of potential effects on Crown land, private property, and protected areas. The assessment of development potential extended the analysis of effects on private property beyond what might typically be found within this VC for a transmission line project.

### *Visual Quality*

The MMTP assessment included Visual Quality as a VC and provided the most comprehensive visual quality assessment undertaken for a transmission line project in Manitoba. The assessment quantified potential effects, based on photo-realistic renderings from multiple viewpoints, each chosen to be representative of potential views in the Project area.

### *Community Health*

The community health assessment addressed potential health effects other than those related to

environmental factors such as stress and annoyance, health effects related to socio-economic change, and Indigenous health effects related to the availability of traditionally harvested foods.

The assessment was also advanced by building on what was done for the Keeyask and Bipole III Projects. For example, the Keeyask EIS considered effects related to socio-economic change (i.e. social determinants of health), effects related to the mobile workforce, and effects related to the availability of traditional foods. The MMTP EIS addressed these effects, and also addressed effects resulting in stress and annoyance.

### *Human Health*

The human health risk assessment for this Project addressed potential health concerns associated with changes in air quality and EMF and was expanded to include an assessment of the potential effect of herbicide usage on country food quality and on the human health risks that may be associated with the consumption of country foods harvested from the Project ROW.

### *Heritage Resources*

Predictive modeling was conducted for the heritage resources VC that incorporated previous development as a variable. This inclusion focused the field assessment on areas that had not been developed but still recognized that previously developed areas adjacent to the Seine, Red and Assiniboine Rivers had the potential for deeply buried heritage resources because of past flood events.

### *Agriculture*

An advanced understanding of agriculture relative to similar, previous assessments was developed through characterization of the various types of agricultural operations and activities including:

- identification and characterization of intensive livestock operations;
- mapping and valuation of crop production throughout the Project area; and,
- review of areas of increased management effort around towers including literature review and findings of the PAMI 2015 Farming Around Hydro Towers evaluation in relation to the areas used in Manitoba Hydro's compensation formula to confirm the level of conservatism in this formula.

The engagement process represented an improvement over prior assessments (e.g., Bipole III) including a rigorous agricultural-specific engagement program through key person interviews of industry representative groups (such as Keystone Agricultural Producers, Manitoba Association of Aerial Applicators, and Manitoba Pork Producers). This resulted in a stronger assessment focused on the issues that were identified as important to the agricultural stakeholders that will ultimately be affected

Manitoba Hydro's MMTP biosecurity program represents improvement over previous assessments and projects. Engagement with agricultural producers and Manitoba Agriculture has resulted in a

stronger focus and emphasis on biosecurity in the assessment, and ongoing improvements to our biosecurity policy and standard operating procedures. Manitoba Hydro's commitment to a pre-construction soil sampling program for biosecurity, being developed in discussion with Manitoba Agriculture, Food and Rural Development, is a good example of our commitment to improving the way this important agricultural issue is addressed. The third party monitoring program of biosecurity procedures will offer further, impartial, oversight of policies and procedures tested on Bipole III and planned for this Project.

### Inclusive

Manitoba Hydro was inclusive as it sought out groups and individuals potentially interested in the Project. Notification was done broadly and encouraged and welcomed groups and individuals to participate throughout the engagement process in any capacity with which they felt comfortable. The engagement process utilized various notification methods to reach out to local individuals and groups by using letters, postcards, newspapers, email, phone calls, posters and radio. This inclusiveness continued throughout each round of the engagement process where interested parties were identified. Thousands of letters were sent out, over 25,000 postcards were sent to postal codes in the route planning area, and numerous email campaigns were transmitted to reach potentially interested groups and individuals.

Legal counsel for the Southern Chiefs Organization put forth the argument that proximity alone should not be the measure of involvement in understanding effects to rights-based practices. Manitoba Hydro agrees, and the inclusiveness of the FNMEP ensured those interested in participating were given opportunities to understand the Project and newcomers were welcomed to the process as the Project assessment progressed. This openness and inclusive mindset is demonstrated when both Shoal Lake 40 and Iskatewizaagegan No. 39 Independent First Nation were invited to participate as soon as Manitoba Hydro representatives heard indirectly that there may be interest. Manitoba Hydro demonstrated openness to parties when some chose to not participate, then decided to participate, then again chose to leave the relationship, then again decided to participate. Each time, Manitoba Hydro representatives welcomed input, sought to find methods best suited for their engagement, and updated contribution agreements to enable continued support.

Prior to filing the EIS, through the FNMEP, Manitoba Hydro held over 90 leadership meetings, community open houses, information sessions, workshops and field visits and had six traditional knowledge studies that shared invaluable information about specific site concerns and preferences.

Public and First Nation and Metis Engagement informed the assessment process, including routing of the Project, the selection of valued components, the analysis of valued components and mitigation measures put forward. As noted throughout the proceedings, knowledge from communities regarding land features and uses was critical in determining the final preferred route recommended and assessed for the Project. This knowledge will continue to inform the environmental protection program.

**Routing**

Selecting a route is the first and most effective option to mitigate potential effects of a transmission project. The fabric of the southern Manitoba landscape is diverse, supporting many homes, miles of existing infrastructure, major rivers and streams, tallgrass and mixed grass prairie, wetlands and important peat bogs, and supports some of the best farming in the Canadian Prairies. This part of the Province is the traditional territory of Anishinabe, Cree, and Dakota people and the homeland of the Metis Nation and has a history important to the making of Canada. This land is valued by many.

Manitoba Hydro's challenge at the onset of Project planning started with finding a tool that could accommodate these landscape-level considerations where the final route selected would consider numerous site specific factors, such as seeking to avoid homes, have minimal impacts to agricultural operations, reduce fragmentation to intact natural habitat and be respectful of multiple gathering areas important to multiple First Nations and to Metis across Manitoba. The process needed to provide the opportunity for individual feedback to be considered and local siting had to be respectful of unique characteristics of each parcel of land. Mr. Matthewson described this challenge well on May 10 when he stated:

> "*There are numerous potential effects associated with routing new transmission facilities. These potential effects are not typically mutually exclusive, meaning the avoidance of one potential effect will often result in a trade-off with another.*" Page 511

In the EIS and throughout this hearing, Manitoba Hydro representatives described the routing and engagement processes that resulted in a route that 'thread the needle' through this valued landscape in a way that resulted in just one relocated residence, parallels existing transmission lines for almost half its length, was sensitive to development plans, and only traversed 36 km of Crown land.

## Selecting the right tool

This land use planning challenge began with selection of a tool that could accommodate both the detailed geospatial information available in southern Manitoba, as well as be sensitive to engagement outcomes, as concerns and values from those potentially affected by the Project are heard.

After review of transmission line siting processes in nine jurisdictions, the EPRI-GTC method was adopted as it provided transparency in decision making, could be adapted to suit the diversity of data and information available for the southern Manitoba landscape, and was inclusive of both geographically-specific information and engagement input. Mr. Matthewson described the challenging nature of data availability in southeastern Manitoba and how we worked to accommodate the different data sets that exist in this area when he stated

> *"...certainly through the alternate corridor evaluation model development with the technical data holders that we brought together for that, they certainly brought together new data*

*sets that we weren't aware of on the Bipole III project and were incorporated into this project, such as some of the waterfowl habitats, the unique ungulate habitats, the grouse lek areas. There is a variety of different features that we were able to gather through building -- conducting that workshop, and people telling us and making us aware of new data sets such as wetlands; in this study area there was extensive wetland mapping being undertaken by various agencies, and we had that available to us throughout the different stages of the assessment on routing, which we didn't have for a project the scale of Bipole."* May 10, Pages 634-635.

At its core, the EPRI-GTC model identifies the value of geographic landscape features. The first set of values were determined by stakeholders that participated in the Alternate Corridor Workshops. These stakeholders were technical data holders knowledgeable about the southern Manitoba landscape and versed in how land uses and features could interact with transmission lines (Transcripts, May 10, Pages 644-645). The values ascribed to land use features are clearly described and tabulated in the models that are used in the EPRI-GTC methodology to transparently share the decision making process. Of particular importance to Manitoba Hydro was the inclusion of engagement outcomes in decision making. Ms. Bratland described that the EPRI-GTC model was selected because

*"...it afforded the opportunity for early input from stakeholders in terms of developing criteria for the alternate corridor model, and we were able to integrate it with our public engagement processes and our First Nation-Metis engagement processes in order to incorporate as much feedback as possible."* May 10, Page 626.

Chapters 3, 4, and 5 of the EIS describe specifically how routing and engagement are interrelated, and this linkage was explained further in detail on May 10 when Ms. Bratland presented the linkages between processes when she described how

*"...teams used the tools in the EPRI-GTC methodology to inform decision-making. This brings together a large amount of data and information about the landscape and interests on the lands, and additional information developed and received through engagement feedback and discipline specialist study, to help us in leveraging the expertise and knowledge and make decisions in a project team environment."* May 10, Page 505

She went on to explain that

"*In total, roughly 60 people were directly involved in route planning and decision-making, and more than 100 were involved in assessments and analysis that fed into this process.*" May 10, Page 507

Feedback was sought early and often and incorporated directly in the criteria used to plan, evaluate, and select routes. This included informing the criteria in the Alternative Corridor Model, the Alternative Route Evaluation Model, and direct input into route planning through the development of mitigative segments.

## Building the Models and Informing the Criteria

Contrary to the belief of the Southeast Stakeholders Coalition, the EPRI-GTC methodology was calibrated for use is southern Manitoba through a number of steps that resulted in a database of geospatial information describing the landscape and models with criteria that reflect the value of the features on this landscape.

An early step in this process included calibration of the Alternative Corridor Model (ACM) for specific use in Southern Manitoba. Workshops held in May of 2013 to calibrate the models were the topic of some discussion during the hearing. The main purpose of these workshops was to gather available geospatial data for use in the Alternative Corridor Model and to create a map that would reveal areas more suitable for supporting transmission line development, from different perspectives.

For the ACM workshops, emphasis was placed on ready and available, regional and publicly sharable data. No group or agency was funded to obtain data in preparation for this workshop, and those who may not have been in attendance were thought to not have ready, available and regional data they were able or willing to share publicly. Manitoba Hydro has agreed to meet with communities that are willing and able to share data, to discuss how to create an opportunity to gather existing regional data for use on future projects (Undertaking Exhibit MH-060)

The outcome of this workshop resulted in a database of geospatial data for the model and a map of corridors (Map 5-10) that provided a large area within which potential alternative routes could be developed. It was in later steps of the routing process where detailed consideration of specific landscape features, constraints and opportunities were layered on top of these broad areas to develop potential route segments for the project.

In November 2013, further workshops were held to help inform the criteria used in the Alternative Route Evaluation Model (AREM). These workshops sought feedback that would help to calibrate criteria and weights. Calibrating the model had bearing on routing outcomes as route selection criteria were determined and discussion was held regarding the importance of criteria to those in attendance. Modifications to criteria were discussed and local issues and concerns were shared. First Nations, the MMF and Aboriginal organizations were invited to participate in these workshops. Unfortunately, no First Nation chose to attend and, although an MMF representative attended, it was only as an observer.

After further invitations, and shortly after the November 2013 workshop, Manitoba Hydro met with Swan Lake, Long Plain and Roseau River Anishinabe First Nations to discuss areas of concern and valuable sites. These January 2014 Round 1 Preliminary Routing discussions resulted in data that informed the selection of a border crossing area for the project and contributed to understanding the importance of areas east of the Watson P. Davidson Wildlife Management Area where 'zones' of importance were identified along with detailed Heritage, Sacred and Traditional Practice Areas (see Appendix 4C of EIS). The knowledge gained from the meetings with these First Nations, although preliminary in nature, added to the perspectives of the workshop participants.

Throughout the routing and assessment process, Manitoba Hydro strived to ensure that FNMEP and PEP feedback were included in consideration at each stage of the routing process to arrive at the final preferred route.

## Listening to feedback

Through field programs and early rounds of engagement Manitoba Hydro gained greater understanding of the unique features important to individuals and landscape features supportive of species sensitive to linear developments. These early understandings helped in the development of mitigative segments that responded to concerns heard.

Examples of responsiveness to public concerns were shared by Mr. Joyal when he explained how Manitoba Hydro worked closely with the RM of Piney and local landowners regarding the border crossing.

> *"...due to concerns raised with the Piney-Pine Creek Airport. We worked closely with the RM of Piney, and notified stakeholder groups and sent letters to landowners in the area under consideration. These letters invited individuals to attend an open house, or to contact us to discuss this change. We met with the predominant landowner and they outlined on site where their future development would be potentially developed. This predominant landowner also developed an alternative option that was presented and remained completely on their property. Through these discussions, the modification developed was accepted as part of the preferred route. Subsequently in round three, a slight adjustment was made to the alignment by the primary landowner to accept the transmission line on their property, to minimize the potential effects on their neighbour's smaller 40-acre parcel."* May 9, Pages 269-270

Later in his testimony, Mr. Joyal described an instance where the RM of Stuartburn and local landowners raised concerns about a cemetery used for the cultural practice of Praznik and this discussion ultimately influenced routing.

> *"The community raised concerns with the location of the transmission line early in the process, and believed the line was in too close a proximity to the cemetery. The alignment would have removed the treed boundary, and participants believed it could change the way the cemetery was used for this cultural practice. Manitoba Hydro was invited to a meeting to present the Project in Sundown, Manitoba, where additional concerns were heard and documented. Additional meetings and discussions were held with landowners and the RM council as the engagement process progressed. In response to this concern, we developed a mitigative segment to gain separation from the cemetery... We worked with our tower design team in utilizing self-supporting structures in the area where guyed structures were to be used, to minimize the right-of-way clearing requirements around the site. To share this information with the community, a handout with site photographs and the modification was developed. Due to the importance of this site, the site was flagged as a priority location for the visual impact assessment."* May 9, Pages 279-280

Manitoba Hydro continues to work with the RM of Stuartburn regarding the process, and if Manitoba Hydro is made aware of activities being undertaken on the site, Manitoba Hydro will not undertake construction or repairs during these times unless there is an immediate requirement.

Further examples of responsiveness to public concerns are shared within the EIS (Chapter 3 3.10.2.1.3 and 3.10.2.2.9 to 3.10.2.2.16)

The routing team's process of route planning was also influenced by information and knowledge shared through the First Nations and Metis Engagement Process (FNMEP). This knowledge and information was collected through a wide variety of mechanisms including self-directed studies, meetings, and field trips in which participants shared their knowledge of locations of interest. The importance of the FNMEP was described in Mr. Matthewson's testimony:

> *"There are essentially three pillars that are required for route planning, in my opinion. These include the vast amounts of geo-spatial data that you need to do an exercise like this, the huge amounts of information that we need. We need public, First Nations and Metis engagement processes to contribute to the whole process. That's the second pillar. The third pillar is that technical expertise that the route planners have to try to design a line and a route that tries to address these concerns."* May 10, Pages 606-607

Throughout the routing process, the concerns heard from the FNMEP were incorporated into planning and decision making, whenever that feedback was provided. On May 9th, Ms. Coughlin noted that:

> *"...following any discussions with communities where preferences were shared, or site specific knowledge enhanced value component understanding, or provided context to the EIS, Manitoba Hydro shared this information with the assessment team, and feedback was received in a variety of formats and manners. So we listened during meetings and field tours and discussions, and we asked questions. We looked at maps, we conducted mapping together, and we looked at draft TK reports as well as final TK reports."* Page 293

One of several examples of direct FNMEP involvement in route planning can be found in Chapter 4 of the EIS on Pages 4-20:

> *"A map provided by Roseau River during Round 2 indicated specific routing preferences in the area between Menisino and the border. These site-specific areas of concern contributed to routing decisions. Roseau River Anishinabe First Nation representatives also expressed concerns about the line traversing a private property that is of importance to the First Nation near Sundown. Manitoba Hydro developed and subsequently adopted a modification as part of the Final Preferred Route."*

A common theme heard through the FNMEP was that, as you move further east in the study area, there would be greater impact to culturally and historically important sites and intact natural forests. Ms. Coughlin provided clarification in her testimony that Manitoba Hydro had received both general and specific information from First Nations about the value of certain parts of the study area. In response to a question from Mr. Toyne, she explained:

> *"I think your premise is that we're making decisions before having any information, and that's simply not the case. We had information, concerns from First Nation shared throughout the process as well as through the ATK studies.".* May 9, Page 404.

Ms. Thompson goes on to describe specific data when she stated

> *"At the time, during Round 1, the information that we had received from the communities was at that time, they had more concerns about the southeastern Area 3. However, as the routing process progressed, we heard more concerns as well about overall study area."* and she goes on to explain that *"if you have Map 11.3 in the EIS, it details a lot of the site-specific information that helped inform our decision-making."* May 9, Pages 405-406

While some self-directed studies may not have been completed and submitted prior to the route evaluation workshop and filing of the EIS, feedback and information that had been shared from those participants who did not submit reports early was used to inform analysis and decision making. Consideration of this feedback was reflected in the Preference Determination step in the category of "Community" that was given a 30% weighting. As reflected in the notes from Chapter 5, the FNMEP team shared what it had heard and learned from the FNMEP and this information was analyzed and reflected in decision making.

Dave Daniels, a representative at the hearing for Southern Chiefs Organization and a member of Long Plain First Nation summarized on May 29th the consideration given to his views when he stated

> "*What we had recommended to Manitoba Hydro -- and they listened to us -- is that -- stay away from the east side of that Watson Davidson Wildlife Management Area."* Page 3073

## Could the route have been different?

Two of the participants at the hearing suggested that, had Manitoba Hydro been more considerate of their perspective, a better route would have been put forth. Mr. Mills suggested that if Manitoba Hydro truly valued greenhouse gas reductions, a more direct route would have been proposed. Manitoba Hydro's comparative evaluation process included elimination of potential routes with lengths greater than 120% of the shortest route (EIS Section 5.5.4). This factor, not only helped to address costs and issues of theoretical back-tracking, it helped to ensure that environmentally economical routes were considered.

The only participant to suggest specific modification to the FPR was the Southeast Stakeholders

Coalition, who suggested modifying the preferred route to follow route AY. Considering the importance of the area traversed by Route AY noted by First Nations participants, and the natural value of the area noted by the discipline specialists involved in routing and environmental assessment, Manitoba Hydro remains confident that the preferred route selected offers a more balanced solution considering all the perspectives, and a lower overall effect than the eliminated routes including route AY.

The Southeast Stakeholder Coalition also suggested that large buffers could be placed around the homes of private landowners and communities and that this would result in different, and better routes. However, this ignores the view of First Nations groups participating in the hearing (Peguis First Nation, Southern Chiefs Organization, Dakota Plains Wahpeton) and the MMF, all of whom have noted that Crown land is limited in this region of the Province and that this area represents an area of high use by First Nations and Metis. Their desire is for routing that avoids undisturbed Crown land.

Mike Sutherland, a Peguis First Nation member testified on May 24 and noted that Peguis community members had

> *"extensive use land east of where you see the dots..., which include the northern part of that selected route (AY)"* and further noted that *"people (Peguis community members) are comfortable where the preferred route is sitting right now"* Page 2593

In her Testimony of May 10th, Ms. Bratland noted:

> *"I believe you would run into if you buffer things like buildings and residences in an area with a fair bit of development and residential development on one end, is that ultimately you could force yourself into undeveloped areas. And we wanted to be able to develop routes that could include different trade-offs of land uses, including fairly undeveloped areas with more natural features, as well as more developed areas with agriculture and some proximity to homes."* Page 716

The SCO suggested that undisturbed Crown land should be considered an area of least preference. Indicating undisturbed Crown lands as an area of least preference is not feasible for the same reason that private lands and homes cannot be buffered by a large amount—the result would be a predetermined location of routes on developed and private lands.

As the route planning area includes a mosaic of developed and undeveloped landscapes, the criteria used in planning and evaluation represent characteristics of many of the values these differing landscapes support. Considering any one perspective in isolation of others is not a balanced or responsible approach. Manitoba Hydro focused on landscape characteristics, such as: the habitat present, the land uses they support, the interrelation to overall landscape connectivity, the location and value of parcels of land to land users, and the context of rarity. It is the multi-factored consideration of all of these aspects that results in a balanced decision and proves the value of the routing methodology adopted for MMTP.

As Ms. Bratland stated on May 10th of the hearing:

> "*...we acknowledge that those that are affected by this transmission project may not accept this as their preferred route, and that's completely understandable. But I want you to know that our team interacted directly with those potentially affected individuals and communities and landowners. We were a part of all of those conversations. And we have dedicated our time and our energy over the last five years to carefully plan, engage and assess, with the aim of limiting the effects of the transmission line on people and the environment."* Pages 613-614

We have sought to limit these effects by making careful decisions about transmission line routing in an objective, inclusive and transparent manner that balances the interests on the landscape with the interests of those affected and the interests of all Manitobans in mind.

## II. Addressing concerns raised by intervenors

This section outlines the key arguments put forward by Participants in the Clean Environment Commission (in the order selected by the CEC at the hearing) and offers Manitoba Hydro's perspective and response for consideration.

**Consumers Association of Canada (CAC)**

From CAC Manitoba's perspective, best practice environmental assessment must be guided by principles of transparency, inclusivity, informed deliberations and meaningful consumer participation. Manitoba Hydro can proudly say that its environmental team has embraced each and every one of those principles and has carefully and thoroughly described, in both the EIS and in its thoughtful presentations, how each of those principles was followed.

The CAC also referenced a Best Practice Adaptive Management model. This is the model that is used by Manitoba Hydro and, over several projects, it has used that model to enhance its practices and move environmental assessment, follow-up and monitoring in Manitoba several steps forward. Manitoba Hydro will continue to further this model of adaptive management on this Project.

Much of the CAC cross-examination and the final argument focused on the concept of uncertainty and concern that Manitoba Hydro has not recognized this concept sufficiently. However, in the words of Dr. Fitzpatrick (found at Page 35 of her report),

> "*I have confidence that uncertainty informed the selection of the VCs*". Uncertainty also informed the monitoring program. Greater monitoring is planned for effects with less certainty with an adaptive management model put in place to respond to unanticipated outcomes.

There were many licensing and non-licensing recommendations laid out in CAC's final argument. Manitoba Hydro's comment on each can be found in Appendix B. However, with respect to the suggestion of a third party environmental audit, it should be noted that there is already extensive third party oversight intended for this Project, including but not limited to the following parties:

- Manitoba Sustainable Development who is responsible for approving each of Manitoba Hydro's construction environmental plans, after seeking input from several provincial departments;
- Various provincial departments who must ensure the licence conditions and permits falling under their scope of authority are adhered to;
- The National Energy Board who has environmental inquiry provisions and has done audits on past international powerline projects;
- The Departments of Transport and Fisheries and Oceans at a federal level;
- Provincial and federal departments (which include biologists and other experts) responsible for reviewing the annual monitoring reports;
- ISO auditors who can review the results of Manitoba Hydro's Environmental Protection

Program;
- Provincial and federal inspectors;
- Third party biosecurity monitors;
- Environmental monitors, if external;
- Monitors established by the Indigenous monitoring group, or other mechanism selected for Indigenous monitoring of the Project; and
- Landowners, through landowner liaisons or other public feedback forums

Rather than recommend yet another form of third party auditing, at significant cost and requiring an extensive dedication of time and effort, Manitoba Hydro reiterates its proposal for a licence condition that empowers the Provincial Government to order an audit, if one is deemed to be necessary after the third party audit on Bipole III expected next year has been received and its value assessed.

In CAC Manitoba's final argument, on June 5, 2017, the CAC indicated that

> *"While CAC Manitoba appreciates the aspirational statements of Manitoba Hydro, there is little tangible evidence in this hearing to demonstrate commitment to these statements."* Page 3763

The CAC goes on to recommend the following licensing condition:

> *"Manitoba Hydro should develop, in collaboration with grandmothers, Indigenous elders, and knowledge holders a proclamation or express policy statement on its commitment to respecting indigenous world views and legal orders, which includes Manitoba Hydro's understanding of its responsibilities flowing from this commitment."* Page 3770

The need to recognize and appreciate Indigenous worldviews has been a key principle since the start of this Project, as indicated by Ms. Coughlin on May 18, 2017:

> "*The following principles guided Manitoba Hydro's approach to First Nation and Metis engagement for the Project, and that includes the diversity of First Nation and Metis cultures and world views should be understood and appreciated. Manitoba Hydro should work with First Nations and Metis to better understand perspectives and determine mutual approaches to address concerns and build relationships*." Page 286

Manitoba Hydro's commitment to understanding and appreciating Indigenous worldviews has been demonstrated through the extensive engagement process, funding for self-directed studies and the integration of perspectives brought forward through engagement into the routing and assessment process.

Manitoba Hydro remains committed to incorporating Indigenous worldviews in this project, as demonstrated by Manitoba Hydro's:

- commitment to involve Indigenous communities in environmental monitoring;

- offer to revise the draft Cultural and Heritage Protection Plan to add specific language that identifies the need to respect Indigenous worldviews and legal orders; and
- continued engagement with communities during construction and operations

CAC Manitoba's Final Argument, on June 5, 2017 also recommends

> *"...that the Minister support the longstanding Indigenous institutions in Indigenous communities consistent with the Truth and Reconciliation Commission's Calls to Action, and incorporate a circle of grandmothers with a mission to oversee safeguarding the environment, as recommended in the Keeyask report."* Pages 3770-3771

Manitoba Hydro looks forward to continuing discussions with communities about environmental monitoring and would be open to further discussion incorporating a circle of grandmothers if recommended by the communities. Manitoba Hydro has heard from communities regarding interest in conducting ceremonies before and during construction of the project; however, it does not believe such events should be mandated in a licence condition, particularly when those who would be asked to participate in such a 'circle' did not recommend it for this project. On May 23, 2017 Mr. Matthewson explained that:

> "*Each community seems to have a different perspective and different desire to have a ceremony at different stages of the project. Some of them are just once, at the beginning of the project; sometimes it is at the start of every construction season. So Manitoba Hydro works with communities to address and facilitate any type of ceremonies that those communities have a desire to have prior to or during the project*." Page 2341

**Southern Chiefs Organization**

SCO indicated in final argument that it would like to see, in the future, broader and earlier engagement by Manitoba Hydro on its projects. In terms of First Nations communities, Manitoba Hydro demonstrated a broad approach in its engagement processes. Any First Nations who expressed an interest in the Project, regardless of the location of the reserve, as it was expressly recognized that First Nations members pursue traditional activities throughout the Province of Manitoba. In order to ascertain interest in the Project from those at a distance from the actual Final Preferred Route, Manitoba Hydro had a broad engagement program which included advertisements and notifications in The Drum, The Winnipeg Free Press, The Winnipeg Sun, and NCI Radio, to name a few (see Transcript from May 9, starting at Page 320) As Manitoba Hydro also engages broadly with communities throughout Manitoba, it uses those opportunities to speak of upcoming projects and to determine the level of interest.

With respect to earlier engagement, Manitoba Hydro engages the public, First Nations, the Dakota people, the MMF, and Indigenous organizations when it has sufficient knowledge and information on a project to do so. First Nations specifically have made this request in the past, so as not to divert precious internal resources too early in a project. However, Manitoba Hydro did hear, through the course of this proceeding, that there exists regional knowledge and data that First Nations may be willing to share at an earlier stage to information matters such as the development

of alternative corridors. In Manitoba Hydro's commitment to be responsive and adaptive, it will endeavour to meet with representatives from First Nations, the Dakota people, the MMF and Indigenous organizations such as SCO to discuss opportunities to gather such data and engage even earlier in future projects.

Throughout the engagement process, Manitoba Hydro worked to listen and better understand routing concerns and preferences from First Nations, the MMF and Indigenous organizations. As stated by Mr. Bedford during his opening remarks on May 8,

> "*...at Manitoba Hydro we have tried to improve our recognition and integration of Indigenous knowledge in our work. We have, arguably more than with previous projects, tried to listen and to avoid impacting lands that Indigenous people told us were of a special value to them*." Pages 23-24

The concept of zero net loss of Crown land was introduced and it was suggested that Manitoba Hydro be required to purchase private land in an amount equal to the Crown Land lost as a result of its projects, and to then convert it to Crown Land. Manitoba Hydro has not considered this concept for this Project for a variety of reasons. As access to Crown Land will only minimally be impacted by this Project, and only for short durations due to construction, the purchase of small amounts of private land and the transferring of it to the Province for distribution or use by Indigenous people is not reasonable for a variety of reasons, including the understanding that the contiguous nature of intact Crown lands is a key aspect of its value. Further, Manitoba Hydro's impact to natural habitat is minimal and, in some cases, there are enhancements or additional protections to habitat, such as in the case of golden wing warbler, tall grass prairie, monarch butterflies and bees (Transcript May 23, James Matthewson, Starting at Page 2346)

Other licencing and non-licencing recommendations from SCO are addressed in Appendix C

**Peguis First Nation**

Peguis First Nation, through their representatives, shared an extensive history of Indigenous peoples in the study area and expressed concerns related to limited access to Crown Lands in southern Manitoba.

Similar to many participants heard during this hearing, Peguis First Nation noted the importance of remaining areas of Crown land and voiced concern for moving the route. We heard through Mr. Sutherland's testimony on May 24th that when holding community meetings:

> "*...we talk about the preferred route, where it's sitting right now. And one of the things that we come to find is that people are comfortable where the preferred route is sitting right now.*" May 24, Pages 2592-2593

Manitoba Hydro acknowledges the support for the planned FPR provided by Peguis First Nation, and restated by Mr. Sutherland during the hearing.

Mike Sutherland brought forward four principles of importance, including the understanding that the protection and preservation of the land is in all our interests, a desire to work with Manitoba Hydro, that minimal traditional land should be impacted and a fourth principle:

> "*Fourth, there needs to be monitoring, and Peguis and Indigenous people must be a part of that monitoring. That monitoring must be genuine and responsive to the land, not casual, it must be diligent and it must be funded. Peguis First Nation is not -- must be funded to participate. It must be transparent and it must be open."* June 5, Page 3821

Through the engagement process, Manitoba Hydro has learned that monitoring may mean different things to different groups, and that not all communities and organizations necessarily have interest in participating in monitoring. Peguis First Nation has clearly indicated a preference for collaboration. Manitoba Hydro looks forward to working with Peguis First Nation, and other nations with interest in monitoring. Through this hearing, and through FNMEP, key aspects understood to be of importance in monitoring include:

- a preference to focus efforts in natural areas of the FPR, including those on Crown lands;
- that there is a seasonality to monitoring;
- the terms of monitoring should be open to different methods of participation by different types of participants (youth, resource users, Elders); and as emphasized in Mr. Sutherlands testimony,
- that the monitoring group and Manitoba Hydro work together, and not in isolation of each other.

Manitoba Hydro supports these general principles and intends to work with those communities and organizations with interest to develop a flexible terms of reference that both acts as a mechanism to build relationships and monitors those components of the environment important to participants.

**Manitoba Metis Federation (MMF)**

Although the MMF did not provide the Commission with a final argument or any recommendations for the future, the concerns expressed during its presentation and during cross-examination focused on the adequacy of Manitoba Hydro's assessment of the valued components to fully identify potential environmental effects to Metis rights and interests. The assessment considered the effects of the proposed project on how the use of lands for various traditional activities may be affected. Although the effects of the Project on these activities were assessed, the assessment did not try to distinguish further whether those activities, practices, customs or traditions met the additional tests to be constitutionally protected. Whether or not such activities were asserted by the MMF to be protected as Aboriginal Rights, they were considered to be important to the Metis, and were assessed within the EIS.

The MMTP EIS included a full assessment of the components later expressed by the MMF, in their presentation and in the report of the Calliou Group, to be of importance to them, including traditional and local knowledge, traditional land and resource use, heritage resources, biophysical

elements, socio-economic elements, and human health and safety. While Calliou Group acknowledged that their report did not include consideration of mitigation, the mitigation measures already developed will be applied to eliminate or limit environmental effects, including effects on Metis people and their ability to practice activities of cultural importance. Adaptive management will be used to further enhance those mitigation measures, if changes are required. Input from the Metis on those mitigation measures of greatest importance to them will be encouraged and welcomed.

Further, Manitoba Hydro utilized the information subsequently obtained from the MMF, as described in its report filed in this proceeding on April 20, 2017 and entitled "Supplemental Report where Manitoba Hydro Articulates How the MMF Report Information has Influenced MMTP."

The MMF also expressed concern about the extent of unoccupied Crown Land used for MMTP as, in its view, it would then not be accessible to the Metis for rights-based activities. First, it is important to note that only a small fraction (less than 10 percent) of the ROW for the entire Project is unoccupied Crown Land.

Second, though the land will be used for the Project, it is only for a very short period of time in areas under construction where access will be restricted based on safety concerns to Project staff and the public. Manitoba Hydro's understanding of the legal strength of an easement is different than the one put forth in the Calliou Group in both their report and in testimony. The legal instrument limiting access during construction and maintenance activities is related to safety, rather than the powers given to a lessee under an easement or permit.

Third, the reality of maintenance work on a transmission project such as MMTP is that work is typically very short term (a day), and on average once every five years at any particular location. That this short term and infrequent maintenance work could conceivably deter Metis harvesting may overstate the effect to resource users. The only place where the EIS indicates there may be a permanent change in access to traditional lands would be at or near facilities such as converter stations or switchyards. Metis harvesters are not prohibited from harvesting on ROWs where towers and conductors are located.

**Manitoba Wildlands**

Manitoba Wildlands brought forward three witnesses over the course of the hearing. Concerns with adopting the alternative assessment framework put forward by Ms. McHugh have been describe above in Part 1. Dr. Beckwith described an abrupt climate change scenario that would support building further resilience into the Manitoba Hydro system and strengthens the need for a project like the MMTP.

In Mr. Woodford's testimony, he suggests that Manitoba Hydro replace the existing tower design and replace it with tubular steel, monopole towers. His rationale is that tubular steel towers would require a narrower ROW. As described in information requests MWL-38 and 40 and in testimony, there are many challenges associated with the towers suggested by Mr. Woodford, including:

- Inconvenience - By using the towers suggested by Mr Woodford you may be able to reduce the width of the ROW but would come at the cost of an increased number of towers needed in order to maintain minimum conductor-to-ground clearance. This creates more towers for agricultural producers to navigate and thus increases the inconvenience of working around towers.
- Reliability Impacts - An increase in the number of towers increases the potential points of failure. The conductor placement as proposed for one of Mr. Woodfords 400-kV designs is such that it would not allow for live line maintenance from the tower structure, whereas MMTP's current design does. The ability to conduct live line maintenance is significant both from a reliability and revenue perspective.
- Cost - Both examples of tower design proposed by Mr. Woodfords (described further in MWL IR -40) are substantially more expensive than the current Manitoba Hydro design.

These challenges are described by Dr. Swatek where he further reiterated this in his testimony on May 8, Pages 101-102

> *"I'd like to say a little about the tower design we will be using for the MMTP. We are using a lattice steel tower design for minimal impact. The lattice steel design allows for long span lengths, which allows for fewer towers on the right-of-way. These long span lengths and fewer towers allow us to optimally locate these towers for minimal impact.*
>
> *The tower design uses a compact Delta configuration tower head. This reduces the span length - this reduces the width of the cross arms. And while being compact, this tower head allows for electrical clearances to allow for line work. That's the ability to do maintenance on the line without taking it out of service, which is critical to the availability of this important tie line"*

In Mr. Bedford's cross examination of Mr. Woodford, it became apparent that there would be an additional 300 towers needed over and above what is currently proposed for MMTP. With these additional towers comes additional cost, inconvenience and risk, as described above. Manitoba Hydro's design for the towers for the MMTP have a lower impact, create more reliability and do so in a cost effective manner and as such those suggested by Mr. Woodford are not being pursued.

**Southeast Stakeholders Coalition (SSC)**

The SSC argues that the EPRI-GTC methodology is flawed, and that the application of the methodology was 'flawed' because of false precision, and bias in decision making. SSC believes that a more appropriate route would be AY. They further suggest Manitoba Hydro discounted the concerns of landowners and that the Commission should direct Manitoba Hydro to go "back to the drawing board" on the portions of the route that they do not support.

It is Manitoba Hydro's position that the record for this Project, which includes the EIS, the presentations and cross examination of Ms. Bratland, Mr. Matthewson, and Mr. Glasgow, clearly establish that the EPRI-GTC methodology was applied correctly and effectively on this Project. In putting forward their argument, the SSC engaged Mr. Berrien as a witness. The criticism levied by

Mr. Berrien both in his written and oral testimony- reflect a lack of understanding of the approach and the evidence presented in the EIS and at the hearing.

The fundamental position of the Southeast Stakeholders Coalition is that private residences, agricultural users and privately owned lands should be given precedence in route decision making. Manitoba Hydro does not agree with this. In planning the route for the MMTP it would have been irresponsible to take into account the perspective of only one party when making decisions, or to have given one party's perspective a priority over that of others. One must balance the concerns of all potentially affected individuals and communities, including those of private landowners and First Nations and Metis communities even though these concerns, in some instances, conflict with each other. The concerns of landowners and Indigenous citizens deserved thoughtful consideration, discussion and assessment. The logic put forward by SSC that these concerns "cancelled each other out" is simply false and to take that approach in routing this project and it would be wrong to disregard feedback provided by those who took the time to share information and feedback in the engagement process

Mr. Berrien argued that quantification and the use of a 'mathematical model' creates false precision. The testimony of Ms. Bratland clearly describes that the EPRI-GTC methodology provides mechanisms to incorporate measurement for route characteristics that can be counted and enumerated (homes, cost) as well as contextual consideration of feedback and analysis that is more difficult to quantify but very important to consider (May 10, Page 529). Ms. Bratland further described that the efforts of the Project Team to ensure that the numbers used to reflect the differences between routes in the Preference Determination Model "accurately reflect the differences between routes on the basis of that criteria". The difference between routes, reflected by the difference between the scores assigned, are carefully considered. The false precision argument put forward is simply not true.

Mr. Berrien presented a table of values and 'colors' to argue that the route preferred by the SSC (AY), was superior and better took into account First Nations and Metis concerns because, in his view, Manitoba Hydro failed to take these concerns into account at all. However, upon cross-examination, he concedes that the factors he added to the end of his table only "capture a shadow of these concerns". (June 6, Pages 3397-3398). Further, he admits that the numbers he inserted only represent data from Peguis First Nations. This approach lacks context and expertise and is biased in its selective use of data. SSC argued that the outcome of the routing process would have been improved with additional traditional knowledge data. This argument ignores the fact that the value in the feedback received is in the knowledge that is gained beyond the numbers. The understanding of this information is sought through listening and seeking to understand the context of traditional land use activities provided by FNMEP participants, which Manitoba Hydro did and detailed in its EIS (Chapter 4, Chapter 11). This fundamental lack of understanding regarding the efforts made by Manitoba Hydro to reflect the understandings gained in route evaluation was evidenced in cross examination and is a key factor in Mr.Berriens dismissal and lack of understanding of the methodology used for MMTP.

This lack of understanding in regard to how the FNMEP influenced the project is further evidenced by Mr. Berrien's critique of how engagement information was used. The core concern Mr. Berrien had was that information provided to Manitoba Hydro through self-directed studies, through many meetings with First Nations, and through field trips, was not converted to numbers. Adherence to, or faith in, numbers and quantification is fundamental to western science; however, there seems to be lack of understanding that there may be different ways of knowing, and different considerations to take into account. Asking Indigenous people to tally the value of important sites, or commit to quantifying sites by priority in tables, is not necessarily aligned with other worldviews. First Nations and Metis people may not want to share how many animals or plants they harvested, and specifically where they have harvested. Ten gathering sites are not more important than five simply because 10 is a larger number than five. Manitoba Hydro's assessment did not expect this, nor did it minimize the information provided because it was not provided in a purely quantifiable form. Instead Manitoba Hydro had the benefit of the understanding gained through a thorough PEP and FNMEP. It is the consideration of all of the feedback received, and analysis conducted by a multi-disciplinary Project team of 60 professionals that studied the routing area on the ground over multiple years, that resulted in the selection of the final preferred route (Transcript May 10, Page 507, lines 4-8).

The route evaluation in this process has employed criteria that describe the key land uses in the area and allow for an appropriate 'apples to apples' comparison of route alternatives. As noted in Part I of this document, consideration of additional information and further analysis would not result in route AY being chosen as a preferred route. As noted in the EIS and in evidence provided by Manitoba Hydro, route AY would not offer a more effective balance of concerns that the proposed FPR—rather it would preferentially mitigate the concerns of the SSC.

Additional criticism levelled by the SSC on Manitoba Hydro's application of the EPRI methodology highlights the sound decision making supported by the model. This includes the use of reliability considerations in planning and evaluation of routes, the establishment of criteria by Senior Managers at Manitoba Hydro, the priorities these criteria reflect, and the multi-disciplinary team that made consensus based decisions that were never directed or manipulated by outside forces – maintaining the objectivity of the process. These criticisms are addressed in the following paragraphs.

In his final argument, counsel for the SSC suggests that the 10 km buffer initially employed in route planning for the project to preserve reliability, is a "red-herring" (June 6, Page 3982). As noted in the testimony of Dr. Swatek, the 10 km buffer was initially set as a mitigating strategy to preserve the reliability purposes of the Project, and was developed in consideration of both NERC standards and weather data. NERC standards consider the simultaneous loss of both MMTP and the existing 500-kV line as a Category D contingency (low probability, high impact event), as these two lines

> "represent the sum total of Manitoba's firm electric power import capability" - Dr. Swatek, May 8, Page 104.

Routes were evaluated with the consideration that those that run in closer proximity to the existing 500-kV line (M602F) for longer would have a greater risk to reliability—in particular in areas where the two lines run parallel to one another in a north-south direction. Manitoba Hydro made a careful decision to accept a level of risk where response times to potential double-line failure resulting from severe weather could be met with quick response times in proximity to the city of Winnipeg in the South Loop and Riel-Vivian corridors.

Counsel for the SSC further suggests that Transmission Management Team responsible for setting the criteria in the Preference Determination Model (PDM) were uninformed and biased in their determinations (June 6, p3952), and lacked the multi-disciplinary nature needed in this exercise. Manitoba Hydro established through the record, and through testimony that this is simply not the case. In his testimony, Mr. Glasgow explains that the criteria at this stage of decision making are intended to reflect corporate values and that

> "it's appropriate for executives to participate in assigning corporate values" May 11, Page 743.

The Transmission Senior Management team are the project owners and accountable for this Project regardless of their backgrounds. As such, whether or not they are multidisciplinary is irrelevant. In cross examination on May 11, Manitoba Hydro's Ms. Bratland explains that management team was well aware of the multidisciplinary nature of the Project team charged with applying the criteria in the model:

> *"I think the appropriate people were in the room to set the criteria. And the management team was aware of the process that would be happening before those criteria would apply, were aware of the multidisciplinary nature of the teams that would be informing decisions up to that point, and the appropriate level of knowledge and expertise and experience was in the room when those decisions were made".* May 11,Page 745

The SSC further suggests that the criteria in the PDM are

> *"...heavily weighted in favour of what I call engineering criteria"* June 6, Page 3952.

The PDM was broken down as follows; 40% Cost, 30% community, 15%, Built and Natural Environment, 10% Reliability and 5% Risk to Schedule. While one could argue that Risk to Schedule could be an 'Engineering' criteria it is valued at only 5%. As noted in cross examination and closing statements, the criteria in Preference Determination place high value on community at 30%. It is also fair to say that Manitoba Hydro rate-payers care about cost, they care about reliability (everyone wants the lights to stay on) and they care about the built and natural environment. Hence it is difficult to argue that the PDM is heavily weighted by "engineering criteria", when in fact it is quite the opposite.

In SSC's final argument they put forward the accusations that Manitoba Hydro "discounted the concerns of landowners". This is both unfounded and intentionally myopic. The materials on the

record clearly demonstrate that Manitoba Hydro has listened and understood the concerns of landowners.

May 10, Page 610, Ms Bratland stated:

> *"So in summary, the final preferred route proposed by Manitoba Hydro is the result of three years of study, in consideration of hundreds of thousands of route alternatives. Input was sought early and often, and informed the development of route selection criteria, the routes planned, and the route evaluation. We engaged with 13 First Nations, Aboriginal organizations and the MMF, collecting input over the course of 90 leadership meetings, open houses, workshops, and community events initiated in 2013. The public engagement process, we had over 1,500 people participate over the course of three years. We held 39 open houses and landowner information sessions, held in 15 communities. And efforts are ongoing, including the work of the dedicated landowner liaisons who will work with landowners that are traversed by the final preferred route."*

In conclusion, SSC put forward the argument that the EPRI-GTC methodology is flawed and subjective and applied improperly. This is simply not the case, The application of EPRI-GTC gathered information through the three rounds of the engagement process capturing information from the general public, landowners First Nation communities and the MMF. The process leveraged this information and the knowledge of over 60 experts who participated in route evaluation. It was through this process and because of this process and the application of the knowledge and feedback gathered that resulted in the selection of the proposed Final Preferred Route.

**Dakota Plains**

The Dakota Plains Wahpeton Oyate representative indicated concern regarding the use of biomass that would result from clearing of the ROW in forested areas, and related concerns to burning of slash and consequences for air quality. ROW clearing is a necessary part of constructing transmission lines through forested areas. The preferred means of dealing with cleared timber and woody debris is to make it available for use as merchantable timber either through the selling of the wood to a local timber company or provide wood to local communities, or a combination of the two. When salvage for use is not feasible due to logistic, economic or regulatory constraints, the next-preferred option for dealing with cleared timber and woody debris is in-situ disposal by chipping or mulching. Burning is the least favoured disposal option because of air quality concerns and is only considered when other means of dealing with cleared materials cannot be feasibly employed. (see testimony provided by Mr. Penner on May 15, Page 1094)

The Dakota Plains Wahpeton Oyate representative also expressed concerns regarding Greenhouse Gases (GHG) produced as a result of the Project. Life cycle assessment (LCA) is an environmental management technique that involves the compilation and scientific evaluation of the many inputs, outputs and potential environmental impacts of a product system throughout its life cycle. The Pembina Institute, along with Manitoba Hydro, have well over a decade of experience in LCA of electrical industry projects, as well as professional staff that are highly

qualified in carrying out the requisite highly robust analyses. For the greenhouse gas LCA of the MMTP, model inputs, assumptions, and calculations were reviewed extensively by both Pembina Institute and Manitoba Hydro professionals. Special focus went into the computation of land use change effects, as they are the main contributor to Project emissions. Manitoba Hydro is therefore confident that the final quantification is a reasonable, though likely conservative, general estimation of MMTP GHG emissions.

Questions were also raised by this and other intervenors about ROW width. Through the hearing it has been suggested that the ROW is larger than needed. On May 23, Mr. Matthewson responded to a question put forward by Mr. Gillies where he asked Manitoba Hydro to look at ROW width from an engineering and environmental standpoint. In his response Mr. Matthewson indicated that the environmental and engineering perspectives are both taken into account when designing towers and the associated ROW, reiterating that the ROW is driven by the swing out of the conductors. Mr. Matthewson indicated that how clearing will be reduced where possible, where *"as part of the clearing plan, from the initial, we hadn't by default chosen to clear the entire width 100 metres wide."* ROW width in areas with self-supporting towers is further reduced to 80 metres. Dr. Swatek further points out factors important in determining ROW width when on May 9, he stated:

> *"The right-of-way width is governed by the conductor blowout. We need to contain the conductor within the right-of-way. The conductor blowout is determined by the span length and conductor height, as well as conductor properties.*
>
> *Now, the existing right-of-way is 76.2 metres wide. The proposed MMTP right-of-way will be four metres more. This additional width is to allow for a wider -- is to allow for a wider crossarm width within the tower. Here, just to give you some numbers, the crossarm width for the existing M602I is 13.4 metres. The crossarm width for MMTP will be 16.7 metres. The reason for the increase to allow additional safe working clearances within the tower head. We do require to perform live line maintenance on these lines. Currently on the existing M602I tower we are able to perform live line maintenance on the two exterior phases. These are the conductors that are suspended from the ends of the crossarm. But we are prohibited from performing live line work within the tower window. There is just not enough room to perform that work safely. So we have allowed additional width to perform safe live line work within the tower window. And the additional four metres that we have added translates directly to the additional width of the right-of-way."* Pages 253-254

Although Mr. Mills and others may have identified examples of other, narrower transmission lines, it's important to know that not all lines are comparable. One cannot compare MMTP to direct current (DC) lines and lines with a lower voltage. You need to know the arm and span length, and that each line may have critical nature of maintenance parameters important for reliability.

Some areas of the ROW the vegetation is low or slow growing, and there may be limited clearing outside of the 24 metres required for the access trail and foundations. Mr. Matthewson spoke of the clearing plan that is in development and how it will take many environmental and engineering

factors into consideration when removing vegetation. The plan will also consider the impacts of vegetation management practices moving forward. In his final statement later that same day Mr. Matthewson describes how

> *"...we are trying very diligently, from the start of construction on this project, to manage the clearing process in such a way that it sets us up for a very good integrative veg management process as we move throughout the operation of the line."* May 23, Page 2357

Manitoba Hydro outlined that a Clearing Plan will be developed for the project, which will strive to identify secondary uses for cleared biomass, while considering the feasibility of various uses. It was also indicated by Manitoba Hydro that on private lands, the preferences of private landowners will sought and if they want to retain the timber cleared arrangements will be made. Burning of slash (woody debris) will not occur near residences (May 23rd, p2327, Mr. Matthewson)

## III. Monitoring and follow-up

Through the EIS and the course of the proceedings, Manitoba Hydro has demonstrated its dedication to limiting the effect of the Project on people and the environment and, as such, it will implement a:

> *"comprehensive, adaptive and responsive environmental monitoring plan that builds on the learnings and successes of other approved Manitoba Hydro transmission line environmental monitoring programs."* - Jonathan Wiens, May 22, Page 2098

Manitoba Hydro's mitigation commitments made in the EIS, the hearing proceedings, and the Information Requests are summarized in Appendix A of this document. They, along with any site specific mitigations and the additional general mitigation measures outlined in the EPP, will be implemented to mitigate potential Project effects. The use of adaptive management will be key in addressing uncertainty and planning monitoring activities. Evidence of Manitoba Hydro's incorporation of adaptive management is supported by Dr. Fitzpatrick's review:

> *"A very strong strength of the material presented is the description and application of adaptive management in the monitoring and follow-up reports. This is a marked improvement over the Bipole III project, and the articulation of what adaptive management is, the application in the monitoring and follow-up programs from a systematic perspective."* - Dr. Fitzpatrick, Consumers Association of Canada, May 29, Page 2859

The use of herbicides in managing vegetation along the ROW and potential effects to health was raised as a concern by many participants in the hearing. One May 16, Dr. Bryan Leece, Senior Toxicologist at Stantec, assessed the potential health risk of herbicides in the EIS and concluded:

> *"Manitoba Hydro's use of herbicides in the right-of-way will be lower than what the regulation allows, meaning that the herbicides used by Manitoba Hydro will not result in herbicide accumulation in soil or vegetation. This, in turn, means that the use of herbicides along the right-of-way will not accumulate in vegetation or wild meat, and will not alter the quality of country foods harvested along the right-of-way. Because herbicides will not alter country food quality, they will not alter the human health risks associated with consuming country foods, and thus herbicide use represents a negligible change in human health risk."* - *Dr. Bryan Leece,* May 16, Page 1565

On June 1, Mr. Matthewson summarized that, through the Integrated Vegetation Management Program, Manitoba Hydro only selectively uses herbicides during the operations and maintenance phase to control the growth of trees in the right of way, and that herbicide use is just "*one of the tools in the toolbox"* of vegetation management. Areas identified as sensitive sites through field studies, or discussions with First Nations and the MMF, or members of the public, will be noted in

the operational environmental protection plan and the method chosen to treat those areas will be carefully selected.

> *"...it has been Manitoba Hydro's experience that there are solutions that address both parties' interests and concerns. There are a wide variety of things in the toolbox. If we have all of the tools in our toolbox, we have lots of different options by which we can work with the landowner or the concerned residents to come to a mutually agreeable solution."* Mr. Matthewson, June 1, Pages 3649-3650

Manitoba Hydro considers the involvement of First Nations and the MMF in monitoring to be valuable for the Project and will continue its work to develop mechanisms for involvement such as the proposed Indigenous Monitoring Working Group. It is anticipated that the monitoring program will be further adapted and improved with ongoing First Nations and Metis engagement. As shared in CEC-IR-79, Manitoba Hydro's current plan is to remain open to developing a monitoring program in collaboration with those interested in participating, and adds that it sees benefits in developing the parameters of monitoring collaboratively, rather than dictate one.

Participants in the hearing have noted a concern regarding the duration of the monitoring program. As noted by both Mr. Matthewson and Mr. Wiens, the duration of the monitoring program will remain flexible based on the program's findings and results of several other transmission projects currently under construction such as Bipole III. The monitoring program has undergone scientific review of schedule, methods and valued components by both provincial and federal discipline experts and will be updated to include any conditions arising out of further provincial and federal regulatory review processes. The learnings from Bipole III will continue to benefit MMTP, including monitoring and follow up programs.

## IV. **Conclusion**

The concept of constructing part of the route while a portion undergoes re-routing, as recommended by the SSC, is not feasible for this Project. National Energy Board approval is required prior to start of any construction. The *National Energy Board Act* prohibits construction of any portion of a Project such as this, prior to approval by the NEB. To proceed through the federal process Manitoba Hydro is required to provide a description of the entire route, from the originating station to the international border. Without a recommendation for a complete route, NEB approval cannot occur.

The task before the Commission is to determine whether to recommend the route that Manitoba Hydro has proposed, and whether to accept that the mitigation we have proposed, and our commitments to continue in engagement and monitoring are responsible and sufficient to ensure the effects of the project are not significant. Manitoba Hydro has put forward a project and rationale for that project that demonstrates transparency, that engagement was inclusive and meaningful and that the assessment was informed with years of study and analysis.

The concept of constructing part of the route while a portion undergoes re-routing, as recommended by the SSC, is not feasible for this Project. National Energy Board approval is required prior to start of any construction. The National Energy Board under regulations of the *National Energy Board Act* requires a description of the entire route, from the originating station to the international border, for approval. Without a recommendation for a complete route, NEB approval cannot occur.

Manitoba Hydro has put forth that it will continue to uphold a 'learning mindset'. Mr. Matthewson described this mindset when he stated on May 23 on Page 2294 of the transcript

> "*I've been on a panel previously, on the Bipole III project, and learned a lot from that, and learned more from this. The intervenors' questions are excellent; they drive change. And certainly all the questions that I've received to date have certainly sparked different things that I may be addressing in future environmental protection programs."*

Through these hearings we have listened and understood the value of collaborative monitoring, and that there are diverse and often polarized perspectives on routing that reflect the multiple land uses of the Project study area. We have put forth thousands of pages of analysis and testimony in which we've provided the rationale for decision making, the details of our analyses, and the records of conversations, including those of working meeting minutes, to be clear about the path we took to understanding how to route a transmission line through the fabric of south eastern Manitoba that is so valued by all.

Manitoba Hydro is asking the Commission to support the conclusions of the environmental assessment; that with the application of planned mitigation measures and ongoing monitoring the project effects will be managed. Further, Manitoba Hydro is requesting that the Commission recommend the Final Preferred Route selected by Manitoba Hydro, in recognition that this route

offers a balance of perspectives and limits the overall effect of the project, and that the project will facilitate the transmission of clean, renewable energy to southern export markets, build reliability in the Manitoba transmission system and contribute to Manitoba's economic future.

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# Appendix A: Mitigation commitment table

| Commitment ID | Source (EIS Chapter, Hearing Transcript, Information Request) | Source Description | Source Location | Commitment | Mechanism for Implementation | Location within Document | Notes |
|---|---|---|---|---|---|---|---|
| 1 | Chapter 06 | Environmental Socioeconomic Setting | 6.2.4.3 | Unexpected soil contamination this is encountered during construction will be managed in accordance with the EPP. | Construction Environmental Protection Plan | Soil Contamination (EI-7). And Appendix G - Guidance for Contaminated Soils or Groundwater Identification and Disposal | To be updated in Final Version |
| 2 | Chapter 08 | Fish and Fish Habitat | 8.5.2.2.1 | Aggregate materials will not be removed from the bed or bank of any watercourse or waterway. | Construction Environmental Protection Plan | Borrow Pits and Quarries (PC-2.05) | |
| 3 | Chapter 08 | Fish and Fish Habitat | 8.5.2.2.1 | Construction activities surrounding watercourses will take place within Reduced Risk Timing Windows. | Construction Environmental Protection Plan | Stream Crossings (PC-9.11) and Rights-of-Way (PC-8.05) | |
| 4 | Chapter 08 | Fish and Fish Habitat | 8.5.2.2.1 | Construction vehicles, machinery and heavy equipment will not be permitted in designated machine-free zones, except at designated crossing locations. | Construction Environmental Protection Plan | Stream Crossings (PC-9) and Sec 2.3 Riparian Management | |
| 5 | Chapter 08 | Fish and Fish Habitat | 8.5.2.2.1 | Disturbance to the bed and banks of the watercourses will be limited to the extent possible. | Construction Environmental Protection Plan | Stream Crossings (PC-9.10) | |
| 6 | Chapter 08 | Fish and Fish Habitat | 8.5.2.2.1 | Disturbances to waterbodies, shorelines and riparian areas will be rehabilitated immediately upon completion of construction activities. | Construction Environmental Protection Plan | Fish Protection (EC-3.02) | |
| 7 | Chapter 08 | Fish and Fish Habitat | 8.5.2.2.1 | Disturbed riparian areas will be revegetated following completion of works. | Construction Environmental Protection Plan | Fish Protection (EC-3.02) | |

| Commitment ID | Source (EIS Chapter, Hearing Transcript, Information Request) | Source Description | Source Location | Commitment | Mechanism for Implementation | Location within Document | Notes |
|---|---|---|---|---|---|---|---|
| 8 | Chapter 08 | Fish and Fish Habitat | 8.5.2.2.1 | Drill holes will be sealed as soon as possible in the case of a groundwater level rise. | Construction Environmental Protection Plan | Drilling (PA-6.01) | |
| 9 | Chapter 08 | Fish and Fish Habitat | 8.5.2.2.1 | Erosion protection and sediment control measures will be put in place at all Project locations where surface drainage is likely to flow into fish-bearing waters (Table 8-8). | Construction Environmental Protection Plan | Fish Protection (EC-3.03) | |
| 10 | Chapter 08 | Fish and Fish Habitat | 8.5.2.2.1 | Grading of the watercourse banks for the approaches should not occur. | Construction Environmental Protection Plan | Stream Crossings (PC-9.09) | |
| 11 | Chapter 08 | Fish and Fish Habitat | 8.5.2.2.1 | Property limits, ROW boundaries, buffers and sensitive areas (where applicable) will be clearly marked with stakes or flagging tape prior to clearing. | Construction Environmental Protection Plan | Clearing (PA-3.18) | |
| 12 | Chapter 08 | Fish and Fish Habitat | 8.5.2.2.1 | Shrub and herbaceous understory vegetation along with tree root systems will be retained to the greatest extent possible in order to enhance bank stability. | Construction Environmental Protection Plan | Stream Crossings (PC-9.02) | |
| 13 | Chapter 08 | Fish and Fish Habitat | 8.5.2.2.1 | Where marshy floodplain areas must be crossed, the work will be carried out under frozen conditions. Riparian buffers will be a minimum of 30 m and increase in size based on slope of land entering waterway. Within these buffers, shrub and herbaceous understory vegetation will be maintained along with trees that do not violate Manitoba Hydro Vegetation Clearance Requirements. | Construction Environmental Protection Plan | Stream Crossings (PC-9.02) | |
| 14 | Chapter 08 | Fish and Fish Habitat | 8.5.2.2.1 | Where possible, transmission line approaches and crossings will be perpendicular to the watercourse and will avoid unstable features such as meander bends, braided watercourses and active floodplains. | Construction Environmental Protection Plan | Stream Crossings (PC-9.01) | |

| Commitment ID | Source (EIS Chapter, Hearing Transcript, Information Request) | Source Description | Source Location | Commitment | Mechanism for Implementation | Location within Document | Notes |
|---|---|---|---|---|---|---|---|
| 15 | Chapter 08 | Fish and Fish Habitat | 8.5.2.2.1 | Within 30 m of watercourse crossings, removal of riparian vegetation in the ROW will be limited to select plants required to accommodate overhead lines, and uprooting of plants will be limited. | Construction Environmental Protection Plan | Stream Crossings (PC-9.02) | |
| 16 | Chapter 08 | Fish and Fish Habitat | 8.5.2.2.1 | Wherever possible, existing trails, roads and cut lines will be used as access routes. | Construction Environmental Protection Plan | Access (PC-1.12) | |
| 17 | Chapter 08 | Fish and Fish Habitat | 8.5.2.2.2 | All waste materials (slash) will be stabilized above the high water mark to prevent entry into the watercourse. | Construction Environmental Protection Plan | Clearing (PA-3.21) | |
| 18 | Chapter 08 | Fish and Fish Habitat | 8.5.2.2.2 | Application of herbicides will adhere to appropriate general mitigation measures and all chemical applications will be conducted by a certified licensed applicator. | Integrated Vegetation Management Plan | TBD- Once plan is drafted. | |
| 19 | Chapter 08 | Fish and Fish Habitat | 8.5.2.2.2 | Herbicides are to be applied in accordance with a Pesticide Use Permit and Pesticide Application Requirements for Manitoba Hydro Employees and Contractors Publication. | Integrated Vegetation Management Plan | TBD- Once plan is drafted. | |
| 20 | Chapter 08 | Fish and Fish Habitat | 8.5.2.2.2 | Herbicides will not be applied to open water or to areas where fish habitat may be affected. | Integrated Vegetation Management Plan | TBD- Once plan is drafted. | |
| 21 | Chapter 08 | Fish and Fish Habitat | 8.5.2.2.2 | Herbicides will not be applied, other than backpack applications or handgun spot applications, within 30 meters of open water areas. | Integrated Vegetation Management Plan | TBD- Once plan is drafted. | |
| 22 | Chapter 08 | Fish and Fish Habitat | 8.5.2.2.2 | If minor rutting is likely to occur, watercourse bank and bed protection methods (e.g., construction mats) should be used provided they do not constrict flows or block fish passage. | Construction Environmental Protection Plan | Stream Crossings PC-9.10 | |
| 23 | Chapter 08 | Fish and Fish Habitat | 8.5.2.2.2 | In riparian areas, vegetation will be maintained in a way that leaves root systems intact. | Construction Environmental Protection Plan | Stream Crossings (PC-9.02) | |

| Commitment ID | Source (EIS Chapter, Hearing Transcript, Information Request) | Source Description | Source Location | Commitment | Mechanism for Implementation | Location within Document | Notes |
|---|---|---|---|---|---|---|---|
| **24** | Chapter 08 | Fish and Fish Habitat | 8.5.2.2.2 | Only chemicals approved by the Pesticide Use Permit are to be used. | Integrated Vegetation Management Plan | TBD- Once plan is drafted. | |
| **25** | Chapter 08 | Fish and Fish Habitat | 8.5.2.2.2 | Riparian vegetation maintenance will be conducted by a method that limits watercourse bank disturbance, and if rutting or erosion is likely, appropriate bank protection measures will be implemented prior to machinery use. | Construction Environmental Protection Plan | Stream Crossings (PC-9.10) | |
| **26** | Chapter 08 | Fish and Fish Habitat | 8.5.3.2.1 | An emergency spill kit will be available on site in case of fluid leaks or spills from machinery. | Construction Environmental Protection Plan | Vehicle and Equipment Maintenance (EI-9.01). Emergency Response (EI-2.03), (EI-2.06). Petroleum Products (EI-5.31) | |
| **27** | Chapter 08 | Fish and Fish Habitat | 8.5.3.2.1 | Equipment or machinery will not be washed in, or within 100 m, of watercourses. | Construction Environmental Protection Plan | Vehicle and Equipment Maintenance (EI-9.04) | To be updated in Final Version |
| **28** | Chapter 08 | Fish and Fish Habitat | 8.5.3.2.1 | Fuel storage and equipment servicing areas will be located a minimum of 100 m away from the ordinary high water mark of any watercourse. | Construction Environmental Protection Plan | Petroleum Products (EI-5.06) | |
| **29** | Chapter 08 | Fish and Fish Habitat | 8.5.3.2.1 | In watercourses where mussel SOCC are known to occur, watercourse crossings may occur by boat or barge, or during winter (i.e., under frozen conditions) to prevent mortality of the mussels. | Construction Environmental Protection Plan | Stream Crossings (PC-9) and/or Wildlife Protection (EC-9) and/or Fish Protection (EC-3) | To be updated in Final Version |
| **30** | Chapter 08 | Fish and Fish Habitat | 8.5.3.2.1 | Machinery operation will take place outside the water in a manner that limits disturbance to the watercourse shorelines and riparian vegetation. | Construction Environmental Protection Plan | Stream Crossings (PC-9.03) | |
| **31** | Chapter 08 | Fish and Fish Habitat | 8.5.3.2.1 | Project personnel will be prohibited from fishing at Project locations or along rights-of-way. | Access Management Plan | Fish Protection (EC-3.06) | |
| **32** | Chapter 08 | Fish and Fish Habitat | 8.5.3.2.1 | Slash/debris piles will be adequately stabilized and stored above the HWM. | Construction Environmental Protection Plan | Clearing (PA-3.21) | |

| Commitment ID | Source (EIS Chapter, Hearing Transcript, Information Request) | Source Description | Source Location | Commitment | Mechanism for Implementation | Location within Document | Notes |
|---|---|---|---|---|---|---|---|
| **33** | Chapter 08 | Fish and Fish Habitat | 8.5.3.2.1 | Use only clean ice/snow for construction of an ice/snowfill or ice bridge. Approaches to the bridge should be constructed with compacted snow and ice of sufficient thickness to protect the watercourse channel and banks. Sand, gravel and soils are not to be used for ice bridge approaches. | Construction Environmental Protection Plan | Stream Crossings (PC-9.05) | |
| **34** | Chapter 08 | Fish and Fish Habitat | 8.5.3.2.1 | Vehicle, equipment and machinery operators will perform a daily inspection for fuel, oil and fluid leaks and will immediately shutdown and repair any leaks found. All machinery working near watercourses will be kept clean and free of leaks. | Construction Environmental Protection Plan | Vehicle and Equipment Maintenance (EI-9.05) | |
| **35** | Chapter 08 | Fish and Fish Habitat | 8.5.3.2.1 | Appropriate erosion and sediment control measures will be implemented to mitigate sediment introduction into watercourses. | Construction Environmental Protection Plan | Erosion Protection and Sediment Control (EI-3) | |
| **36** | Chapter 09 | Wildlife and Wildlife Habitat | 9.5.2.2 | Artificial structures for nesting may be provided if unoccupied nests must be removed. | Operations and Maintenance Environmental Protection Plan | TBD- Once plan is drafted. | |
| **37** | Chapter 09 | Wildlife and Wildlife Habitat | 9.5.2.2 | Clearing wastes and other construction debris or waste will not be placed in wetland areas. | Construction Environmental Protection Plan | Wetlands (EC-8.01) | |
| **38** | Chapter 09 | Wildlife and Wildlife Habitat | 9.5.2.2 | Environmentally sensitive sites, features and areas will be identified and mapped before clearing. | Construction Environmental Protection Plan | Rights-of-Way (PC-8.08) | |
| **39** | Chapter 09 | Wildlife and Wildlife Habitat | 9.5.2.2 | In sensitive areas of critical golden-winged warbler habitat, ROW vegetation will be selectively cleared and managed with the integrated vegetation management program to enhance suitability for golden-winged warbler. | Integrated Vegetation Management Plan | TBD- Once plan is drafted. | |
| **40** | Chapter 09 | Wildlife and Wildlife Habitat | 9.5.2.2 | Natural low growing shrub and grass vegetated buffer areas of 30 m will be established around wetlands and riparian zones. | Construction Environmental Protection Plan | Wetlands (EC-8.03) | |

| Commitment ID | Source (EIS Chapter, Hearing Transcript, Information Request) | Source Description | Source Location | Commitment | Mechanism for Implementation | Location within Document | Notes |
|---|---|---|---|---|---|---|---|
| **41** | Chapter 09 | Wildlife and Wildlife Habitat | 9.5.2.2 | Trees containing large nests of sticks and areas where active animal dens or burrows are encountered will be buffered and left undisturbed until unoccupied. Artificial structures for nesting may be provided if unoccupied nests must be removed. | Construction Environmental Protection Plan | Wildlife Protection (EC-9.15) | |
| **42** | Chapter 09 | Wildlife and Wildlife Habitat | 9.5.2.2 | Vehicle, equipment and machinery maintenance and repairs will be carried out in designated areas located at least 100 m from the ordinary high water mark of a waterbody, riparian area or wetland. | Construction Environmental Protection Plan | Vehicle and Equipment Maintenance (EI-9.04) | |
| **43** | Chapter 09 | Wildlife and Wildlife Habitat | 9.5.2.2 | Wildlife features (i.e., mineral licks and stick nests) will be identified in Construction Environmental Protection Plan and mitigation applied such as buffers and/or setbacks prior to clearing. | Construction Environmental Protection Plan | Wildlife Protection (EC-9.03) | |
| **44** | Chapter 09 | Wildlife and Wildlife Habitat | 9.5.2.2 | Rehabilitation plans will include objectives for restoration of natural conditions, erosion protection, sediment control, non-native and invasive plant species management, wildlife habitat restoration and restoration of aesthetic values as required. | Rehabilitation and Invasive Species Management Plan | Rehabilitating and Re-vegetation (PA-9.05) | |
| **45** | Chapter 09 | Wildlife and Wildlife Habitat | 9.5.3.2 | Construction activities will be restricted to established roads, trails and cleared construction areas in accordance with the Access Management Plan (Chapter 22 – Environmental Protection, Follow-up and Monitoring). | Construction Environmental Protection Plan | Access (PC-1.09) | |
| **46** | Chapter 09 | Wildlife and Wildlife Habitat | 9.5.3.2 | Clearing activities will not be carried out during reduced risk timing windows for wildlife species without additional mitigation measures. | Construction Environmental Protection Plan | Section 2.1.3 Wildlife | |

| Commitment ID | Source (EIS Chapter, Hearing Transcript, Information Request) | Source Description | Source Location | Commitment | Mechanism for Implementation | Location within Document | Notes |
|---|---|---|---|---|---|---|---|
| **47** | Chapter 09 | Wildlife and Wildlife Habitat | 9.5.3.2 | To reduce the potential for collisions with wires following wire installation, bird diverters will be placed at environmentally sensitive sites. | Construction Environmental Protection Plan | Section 2.4.1 Birds and Habitat | |
| **48** | Chapter 09 | Wildlife and Wildlife Habitat | 9.6.2.2 | For Manitoba Hydro projects occurring in the same geographic area, coordinate access requirements to reduce the need to construct additional access roads in areas of natural wildlife habitat. | Access Management Plan | Section 2.0 | To be updated in Final Version |
| **49** | Chapter 15 | Agriculture | 15.6.2.2 | Manitoba Hydro will continue to support studies to understand the effects of its projects on agricultural land use and use study outcomes to reduce effects of future projects on conflict with agricultural activities. | Communication Plan | TBD- Once plan is drafted. | |
| **50** | Chapter 10 | Vegetation and Wetlands | 10.5.3.2 | Approach grades to waterbodies will be reduced to limit disturbance to riparian areas. | Construction Environmental Protection Plan | Access Roads and Trails (PC-1.07) | |
| **51** | Chapter 10 | Vegetation and Wetlands | 10.5.3.2 | Buffers and sensitive areas (where applicable) will be clearly marked with stakes and/or flagging tape prior to clearing. | Construction Environmental Protection Plan | Clearing (PA-3.18) | |
| **52** | Chapter 10 | Vegetation and Wetlands | 10.5.3.2 | Grubbing will be limited within the ROW to reduce root damage, except at tower foundation sites and centerline trail. | Construction Environmental Protection Plan | Grubbing (PA-8.04) | |
| **53** | Chapter 10 | Vegetation and Wetlands | 10.5.3.2 | Grubbing will not be permitted within 2 m of standing timber to prevent damage to root systems and to limit the occurrence of blow down. | Construction Environmental Protection Plan | Grubbing (PA-8.04) | |
| **54** | Chapter 10 | Vegetation and Wetlands | 10.5.3.2 | Necessary work permit(s) will be obtained, as required under The Crown Lands Act, The Provincial Parks Act and The Forest Act for work on Crown, designated and provincial forest land, respectively. | Construction Environmental Protection Plan | Appendix C - Environmental Licences, Approvals and Permits | |
| **55** | Chapter 09 | Wildlife and Wildlife Habitat | 9.6.2.2 | Manitoba Hydro will continue to support wildlife-related research efforts in the region including | Environmental Monitoring Plan | Section 3.0 | To be updated in Final Version |

| Commitment ID | Source (EIS Chapter, Hearing Transcript, Information Request) | Source Description | Source Location | Commitment | Mechanism for Implementation | Location within Document | Notes |
|---|---|---|---|---|---|---|---|
| | | | | Manitoba's Breeding Bird Atlas. | | | |
| **56** | Chapter 10 | Vegetation and Wetlands | 10.5.3.2 | Only water and approved dust suppression products will be used to control dust on access roads, where required. Oil or petroleum products will not be used. | Construction Environmental Protection Plan | Access Roads and Trails (PC-1.15) | |
| **57** | Chapter 10 | Vegetation and Wetlands | 10.5.3.2 | Non-herbicide methods such as hand cutting, mechanical cutting or winter shearing will be used to clear the transmission line ROW and other sites. If herbicides are required to control vegetation growth, such as noxious/invasive weeds during construction, all applicable permits and provincial regulations (The Noxious Weed Act) will be followed. | Integrated Vegetation Management Plan | TBD- Once plan is drafted. | |
| **58** | Chapter 10 | Vegetation and Wetlands | 10.5.3.2 | Trees will be felled toward the middle of rights-of-way or cleared areas to avoid damaging standing trees. Trees will not be felled into waterbodies. Danger trees will be flagged or marked for removal using methods that do not damage soils and adjacent vegetation. | Construction Environmental Protection Plan | Clearing (PA-3.24) And Clearing (PA-3.14) | |
| **59** | Chapter 10 | Vegetation and Wetlands | 10.5.3.2 | The Rehabilitation and Weed Management Plan will include objectives for the restoration of natural conditions, wildlife habitat and aesthetic values, and for erosion protection, sediment control, non-native and invasive plant species management, as required. | Rehabilitation and Invasive Species Management Plan | Introduction | To be updated in Final Version |
| **60** | Chapter 10 | Vegetation and Wetlands | 10.5.3.2 | Windrows of grubbed materials will be piled at least 15 m from standing timber. | Construction Environmental Protection Plan | Grubbing (PA-8.09) | |

| Commitment ID | Source (EIS Chapter, Hearing Transcript, Information Request) | Source Description | Source Location | Commitment | Mechanism for Implementation | Location within Document | Notes |
|---|---|---|---|---|---|---|---|
| **61** | Chapter 10 | Vegetation and Wetlands | 10.5.3.2 | Disturbed areas along transmission line rights-of-way will be rehabilitated in accordance with the Rehabilitation and Weed Management Plan. | Rehabilitation and Invasive Species Management Plan | Rights-of-Way (PC-8.07) | To be updated in Final Version |
| **62** | Chapter 10 | Vegetation and Wetlands | 10.5.4.2 | Clearing methods that do not disturb soil will be employed in areas that have to be cleared within the 30 m buffer zone. | Construction Environmental Protection Plan | 2.3 Riparian Management | |
| **63** | Chapter 10 | Vegetation and Wetlands | 10.5.4.2 | Environmental protection measures for working in and around wetlands will be reviewed with the Contractor and employees prior to commencement of any construction activities. | Construction Environmental Protection Plan | Heritage Resources (EC-5.03) | |
| **64** | Chapter 10 | Vegetation and Wetlands | 10.5.4.2 | Natural drainage patterns and flows will be maintained to the extent possible. | Construction Environmental Protection Plan | Draining (PA-5.06) | |
| **65** | Chapter 10 | Vegetation and Wetlands | 10.5.4.2 | Rights-of-way will be cleared when the ground is frozen or dry to limit rutting and erosion where applicable. In situations where the ground is not dry or completely frozen, alternative methods, such as the use of construction mats, will be employed during ROW clearing. | Construction Environmental Protection Plan | Rights-of-Way (PC-8.05, 8.09) | |
| **66** | Chapter 10 | Vegetation and Wetlands | 10.5.4.2 | Riparian Buffers shall be a minimum of 30 m and increased in size based on slope of land entering waterway (See Riparian Buffer Table in Construction Environmental Protection Plan). Within these buffers, shrub and herbaceous understory vegetation will be maintained along with trees that do not violate Manitoba Hydro Vegetation Clearance Requirements. | Construction Environmental Protection Plan | 2.3 Riparian Management | |
| **67** | Chapter 10 | Vegetation and Wetlands | 10.5.4.2 | Surface water runoff will be directed away from disturbed and erosion-prone areas but not directly into waterbodies. | Construction Environmental Protection Plan | Access Roads and Trails (PC-1.19) | |

| Commitment ID | Source (EIS Chapter, Hearing Transcript, Information Request) | Source Description | Source Location | Commitment | Mechanism for Implementation | Location within Document | Notes |
|---|---|---|---|---|---|---|---|
| **68** | Chapter 10 | Vegetation and Wetlands | 10.5.4.2 | Temporary berms, cross ditches or silt fences will be installed between wetlands and disturbed areas when deemed necessary by the Environmental Inspector. Subsoil and topsoil material will be replaced, and pre-construction contours and drainage patterns will be reestablished within wetland boundaries as soon as possible following construction. | Construction Environmental Protection Plan | Erosion Protection and Sediment Control (EI-3). And - I.3 Erosion and Sediment Control Planning Framework | To be updated in Final Version |
| **69** | Chapter 10 | Vegetation and Wetlands | 10.5.4.2 | Erosion protection and sediment control measures will be implemented prior to grading, in accordance with the Erosion Protection and Sediment Control Plan. Grading will be directed away from wetlands. Stockpiled materials from grubbing will not block natural drainage patterns. | Construction Environmental Protection Plan | Grading (PA-7.06 and PA-7.07) | |
| **70** | Chapter 10 | Vegetation and Wetlands | 10.5.5.2 | Where appropriate, regional native grass mixtures will be used to help revegetate disturbed areas in order to control erosion or prevent invasion of non-native species. The mixtures will not contain non-native or invasive species. | Rehabilitation and Invasive Species Management Plan | Rehabilitating and Re-vegetation (PA-9.06) | |
| **71** | Chapter 10 | Vegetation and Wetlands | 10.5.5.2 | Equipment will be cleaned before moving from locations with identified invasive weed infestation. Manitoba Hydro employees and contractors will follow the Transmission Business Unit's Agricultural Biosecurity Standard Operating Procedures to prevent the spread of invasive weeds. | Construction Environmental Protection Plan | Appendix F- Agricultural Biosecurity Standard Operating Procedures | |
| **72** | Chapter 10 | Vegetation and Wetlands | 10.5.3.2 | Weed control along access roads and trails, at temporary construction camps, marshalling yards and borrow sites will be conducted in accordance with the Rehabilitation and Weed | Rehabilitation and Invasive Species Management Plan | Sec 3.2 | |

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| | | | | Management Plan. | | | |
| **73** | Chapter 10 | Vegetation and Wetlands | 10.5.5.2 | Large areas identified as having invasive plant and non-native weed species occurrences prior to the start of construction will be mapped. Weed control along access roads and trails will be conducted in accordance with the Rehabilitation and Weed Management Plan. | Rehabilitation and Invasive Species Management Plan | Sec 3.2 | |
| **74** | Chapter 10 | Vegetation and Wetlands | 10.5.6.2 | Additional surveys will be conducted in the PDA prior to construction to identify new occurrences of rare plants. If previously unidentified plant SAR or SOCC are found on the ROW prior to or during construction, the occurrences will be flagged for avoidance (Section 10.9). | Environmental Monitoring Plan | Section 4.4.2 | |
| **75** | Chapter 10 | Vegetation and Wetlands | 10.5.6.2 | If avoidance of listed rare plant species is not possible, Manitoba Conservation and Water Stewardship will be contacted to determine the most appropriate mitigation action. This could include harvesting seed from the PDA, salvaging and transplanting portions of sod, collecting cuttings or transplanting whole plants. | Construction Environmental Protection Plan | Clearing (PA-3), Rehabilitating and Re-vegetation (PA-9), Rights-of-Way (PC-8),Borrow Pits and Quarries (PC-2) | To be updated in Final Version |

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| **76** | Chapter 10 | Vegetation and Wetlands | 10.5.6.2 | SAR and critical habitat will be protected in accordance with provincial and federal legislation and provincial and federal guidelines. A 30 m setback distance will be applied to known SAR and a 10 m buffer will be applied to SOCC occurrences within the PDA (Appendix 10-B). Setbacks and buffers along the ROW will be clearly identified by signage or flagging prior to construction, and signage or flagging will be maintained during construction to alert crews to the presence of the setback. | Construction Environmental Protection Plan | Clearing (PA-3.04) | |
| **77** | Chapter 10 | Vegetation and Wetlands | 10.5.7.2 | The Contractor will be restricted to established roads and trails and cleared construction areas in accordance with the Access Management Plan (Chapter 22). | Construction Environmental Protection Plan | Access Roads and Trails (PC-1.09) | |
| **78** | Chapter 10 | Vegetation and Wetlands | 10.5.7.2 | The Contractor will prepare Erosion Protection and Sediment Control Plans, which will be accepted by Manitoba Hydro prior to construction and will be updated annually. | Construction Environmental Protection Plan | Erosion Protection and Sediment Control (EI-3.03) | |
| **79** | Chapter 10 | Vegetation and Wetlands | 10.5.6.2 | Final tower siting will avoid confirmed locations of SOCC, where possible. | Tower Spotting | | |
| **80** | Chapter 11 | Traditional Land and Resource Use | 11.5.2.1.3 | Areas identified for selective clearing (e.g., buffer zones, sensitive sites) will be flagged prior to clearing. | Construction Environmental Protection Plan | Clearing (PA-3.04) | |
| **81** | Chapter 11 | Traditional Land and Resource Use | 11.5.2.1.3 | Disturbed areas along transmission line rights-of-way will be rehabilitated in accordance with site Rehabilitation and Weed Management Plan. | Rehabilitation and Invasive Species Management Plan | Rehabilitating and Re-vegetation (PA-9.06) | |
| **82** | Chapter 10 | Vegetation and Wetlands | 10.5.7.2 | Weed control along access roads and trails will be in accordance with the Rehabilitation and Weed Management Plan. | Rehabilitation and Invasive Species Management Plan | Sec 3.2 | |

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| **83** | Chapter 11 | Traditional Land and Resource Use | 11.5.2.2 | No herbicides will be used in the clearing phase of construction. | Construction Environmental Protection Plan | Clearing (PA-3) and Rights-of-Way (PC-8) | To be updated in Final Version |
| **84** | Chapter 11 | Traditional Land and Resource Use | 11.5.2.2 | Vehicles, equipment and machinery must arrive onsite in clean condition free of fluid leaks and weed seeds. | Construction Environmental Protection Plan | Vehicle and Equipment Maintenance (EI-9.07) | |
| **85** | Chapter 11 | Traditional Land and Resource Use | 11.5.2.2 | Construction techniques will be applied that limit effects on vegetation and plant harvesting, including limitations to grubbing, restrictions for contractors to use only established roads and trails, and cleared construction areas, the use of construction mats in situations where the ROW does not have completely frozen or dry ground conditions and contractor-specific Erosion Protection and Sediment Control Plans. | Construction Environmental Protection Plan | Grubbing (PA-8.07), Access Roads and Trails (PC-1.09), Rights-of-Way (PC-8.05, 8.09) and Sediment and Erosion Framework | |
| **86** | Chapter 11 | Traditional Land and Resource Use | 11.5.2.2 | For clearly identified plant harvesting areas, Manitoba Hydro may utilize a variety of measures, including flagging of area, selective clearing methods, construction matting, non-chemical vegetation management, specific measures are assigned on a site by site basis. | Construction Environmental Protection Plan | Clearing (PA-3.15), (PA-3.19), Rights-of-Way (PC-8.09) Clearing(PA-3.17) | |
| **87** | Chapter 11 | Traditional Land and Resource Use | 11.5.2.2 | Herbicides will not be used for ROW clearing. For maintenance of the ROW, an Integrated Vegetation Management Program will be developed. Manitoba Hydro will consider nonchemical vegetation management in clearly identified sensitive sites that contain plants that are of importance to Aboriginal harvesters. | Integrated Vegetation Management Plan | TBD- Once plan is drafted. | |

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| **88** | Chapter 11 | Traditional Land and Resource Use | 11.5.2.2 | Where appropriate, regional native grass mixtures will be used to assist revegetation of disturbed areas to control erosion or prevent invasion of non-native species. The mixtures will not contain non-native or invasive species. | Rehabilitation and Invasive Species Management Plan | Rehabilitating and Re-vegetation (PA-9.06) | |
| **89** | Chapter 11 | Traditional Land and Resource Use | 11.5.3.3 | Applicable buffers and setbacks for bird nesting and breeding sites will be established during clearing activities. | Construction Environmental Protection Plan | Appendix E: Buffers and Setbacks | |
| **90** | Chapter 11 | Traditional Land and Resource Use | 11.5.3.3 | Bird diverters will be installed on skywires in areas of high collision risk potential. | Construction Environmental Protection Plan | Wildlife Protection (EC-9.17) | |
| **91** | Chapter 11 | Traditional Land and Resource Use | 11.5.3.3 | Bypass trails, sensitive sites and buffer areas will be clearly marked prior to clearing. The contractor will be responsible for developing, implementing and maintaining Erosion Protection and Sediment Control Plans and procedures to be put in place prior to commencement of construction activities. | Construction Environmental Protection Plan | Appendix I.3 Erosion and Sediment Control Planning Framework (page 10) | |
| **92** | Chapter 11 | Traditional Land and Resource Use | 11.5.3.3 | Conducting preconstruction surveys for stick nests, mineral licks, and den sites to identify areas for setbacks and buffers. | Environmental Monitoring Plan | Section 4.2.2 | |
| **93** | Chapter 11 | Traditional Land and Resource Use | 11.5.3.3 | Continuing to adapt with changing conditions or unexpected events that may occur through the operation of the Project. | Operations and Maintenance Environmental Protection Plan | TBD- Once plan is drafted. | |
| **94** | Chapter 11 | Traditional Land and Resource Use | 11.5.3.3 | Pre-construction surveys will be conducted for elements such as stick nests and mineral licks to identify areas for setbacks and buffers. | Environmental Monitoring Plan | Section 4.2.2 | |
| **95** | Chapter 11 | Traditional Land and Resource Use | 11.5.2.2 | The Botanical Survey of the Manitoba-Minnesota Transmission Project included as part of Black River First Nation, Long Plain First Nation and Swan Lake First Nation's ATK report will help inform the | Environmental Monitoring Plan | Section 4.4.4 | |

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| | | | | Environmental Protection Program for the Project. | | | |
| **96** | Chapter 11 | Traditional Land and Resource Use | 11.5.3.3 | Reduced risk timing windows for wildlife will be respected to avoid works during periods of the year when wildlife species are sensitive to disruptive operations because of a sensitive lifecycle activity such as calving, nesting and hibernation. | Construction Environmental Protection Plan | Appendix D - Timing Windows | |
| **97** | Chapter 11 | Traditional Land and Resource Use | 11.5.3.3 | Reducing bird-wire collisions by installing bird diverters in areas of high collision risk. | Construction Environmental Protection Plan | Wildlife Protection (EC-9.17) | |
| **98** | Chapter 11 | Traditional Land and Resource Use | 11.5.3.3 | Respecting Reduced Risk Timing Windows for Wildlife to avoid works during periods of the year when wildlife species are sensitive to disruptive operations because of a sensitive lifecycle activity such as calving, nesting, and hibernation. | Construction Environmental Protection Plan | Appendix D - Timing Windows | |
| **99** | Chapter 11 | Traditional Land and Resource Use | 11.5.3.3 | Through ongoing engagement processes, interested First Nations and the MMF will be notified about when/where construction is occurring. | Communication Plan | TBD- Once plan is drafted. | |
| **100** | Chapter 11 | Traditional Land and Resource Use | 11.5.4.2 | Existing access roads, trails or cut lines will be used to the extent possible. Permission to use existing resource roads will be obtained, where applicable. Existing all-weather roads and access will be used wherever possible. | Access Management Plan | Section 2.0 | To be updated in Final Version |
| **101** | Chapter 11 | Traditional Land and Resource Use | 11.5.4.2 | Information signs and the placement of warning markers will be used to identify the active construction site where it intersects a designated recreational trail. | Access Management Plan | Section 4.5 | |

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| **102** | Chapter 11 | Traditional Land and Resource Use | 11.5.4.2 | Mud, dust and vehicle emissions will be managed in a manner that will allow safe, continuous public activities near construction sites | Construction Environmental Protection Plan | Built-up and Populated Areas (EC-2.02) [If applicable] | |
| **103** | Chapter 11 | Traditional Land and Resource Use | 11.5.4.2 | A Cultural and Heritage Resources Protection Plan (Cultural and Heritage Resources Protection Plan) is part of the Environmental Protection Program and available as a standalone document. The Cultural and Heritage Resources Protection Plan sets out Manitoba Hydro's commitment to safeguard cultural and heritage resources and describes how to appropriately handle human remains or cultural and heritage resources discovered or disturbed during the construction of the Project. | Cultural and Heritage Resources Protection Plan | Preface | |
| **104** | Chapter 11 | Traditional Land and Resource Use | 11.5.5.2 | Protection measures such as fencing of a heritage resource site will be used within the ROW. | Cultural and Heritage Resources Protection Plan | Section 1.8 | |
| **105** | Chapter 11 | Traditional Land and Resource Use | 11.5.5.2 | Conducting pre-construction investigations along the route. | Environmental Monitoring Plan | Section 4.2.2 | |
| **106** | Chapter 11 | Traditional Land and Resource Use | 11.5.5.2 | Construction activities will not be carried out within established buffer zones for heritage resources except as approved by Project Archaeologist. | Cultural and Heritage Resources Protection Plan | Section 1.8 | |
| **107** | Chapter 11 | Traditional Land and Resource Use | 11.5.5.2 | Evaluation of any route change or added development will be conducted. | Environment Act | Licence | Any alteration to the project would require evaluation |
| **108** | Chapter 11 | Traditional Land and Resource Use | 11.5.5.2 | Marking identified cultural and heritage sites for protection. | Cultural and Heritage Resources Protection Plan | Section 1.8 | |
| **109** | Chapter 11 | Traditional Land and Resource Use | 11.5.5.2 | Orientation for Project staff working in construction areas will include heritage resource awareness and training, including the nature of heritage resources and the | Cultural and Heritage Resources Protection Plan | Section 1.3 | To be updated in Final Version |

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| | | | | management of any resources encountered. | | | |
| **110** | Chapter 11 | Traditional Land and Resource Use | 11.5.5.2 | Pre-construction investigation by a professional archaeologist in areas that are considered to be heritage sensitive such as sites identified as being culturally sensitive by First Nation and Metis, extant buildings or building foundations, stone features, burial sites and any other heritage resources sites as defined by The Heritage Resources Act (1986). | Cultural and Heritage Resources Protection Plan | Section 2.0 | To be updated in Final Version |
| **111** | Chapter 11 | Traditional Land and Resource Use | 11.5.5.2 | Providing opportunities to MMF and First Nations to develop Cultural and Heritage Resources Protection Protocols outlining processes and protocols in the event of a discovery of a previously unrecorded heritage or culture resource. | Cultural and Heritage Resources Protection Plan | Section 1.3 | |
| **112** | Chapter 11 | Traditional Land and Resource Use | 11.5.5.2 | The contractor will report heritage resource materials immediately to the Construction Supervisor will cease construction activities in the immediate vicinity until the Project Archaeologist is contacted and prescribes instruction. | Cultural and Heritage Resources Protection Plan | Section 1.8 | |
| **113** | Chapter 11 | Traditional Land and Resource Use | 11.5.5.2 | All archaeological finds discovered during site preparation and construction will be left in their original position until the Project Archaeologist is contacted and provides instruction. Environmental protection measures for heritage resources will be reviewed with the contractor and employees prior to commencement of any construction activities. | Cultural and Heritage Resources Protection Plan | Section 1.8 | |

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| **114** | Chapter 11 | Traditional Land and Resource Use | 11.5.3.3 | Providing opportunities for First Nations and MMF to identify sensitive sites to help inform the Environmental Protection Program for the Project. | Indigenous Monitoring Working Group | TBD - Once Terms of Reference are developed. | |
| **115** | Chapter 11 | Traditional Land and Resource Use | 11.5.5.2 | Orientation information will include typical heritage resource materials and reporting procedures. | Cultural and Heritage Resources Protection Plan | Section 1.3 | |
| **116** | Chapter 11 | Traditional Land and Resource Use | 11.5.5.2 | First Nations and MMF will be given opportunities to identify sensitive sites to help inform the Environmental Protection Program for the Project. | Communication Plan | TBD- Once plan is drafted. | |
| **117** | Chapter 11 | Traditional Land and Resource Use | 11.5.5.2 | Developing and implementing a Cultural and Heritage Resources Protection Plan that describes processes and protocols to protect discovered cultural and heritage resources during construction. | Cultural and Heritage Resources Protection Plan | | |
| **118** | Chapter 12 | Heritage Resources | 12.5.2.2 | Pre-construction investigation by a professional archaeologist in areas in close proximity to known heritage resource sites. | Cultural and Heritage Resources Protection Plan | Section 2.0 | To be updated in Final Version |
| **119** | Chapter 12 | Heritage Resources | 12.5.2.2 | protective barriers placed, where required, around heritage resource sites that are inadvertently found during construction so that the area can be protected while work proceeds; | Cultural and Heritage Resources Protection Plan | Section 1.8 | To be updated in Final Version |
| **120** | Chapter 12 | Heritage Resources | 12.5.2.2 | controlled surface collection or salvage excavation of known heritage resource sites, or a portion thereof, that cannot be avoided | Cultural and Heritage Resources Protection Plan | Section 1.8 | |
| **121** | Chapter 12 | Heritage Resources | 12.5.2.2 | education of construction contractors for the appropriate protocol in the event that heritage resources, or objects thought to be heritage resources, are uncovered. | Cultural and Heritage Resources Protection Plan | Section 1.3 | |

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| **122** | Chapter 12 | Heritage Resources | 12.5.3.2 | timing construction and maintenance to avoid any religious ceremonies/practices or interments at Sundown cemetery (Will contact RM of Stuartburn to discuss schedules). | Communication Plan | TBD- Once plan is drafted. | |
| **123** | Chapter 12 | Heritage Resources | 12.5.2.2 | evaluation of any route change or added development (*is done for heritage resources). | Cultural and Heritage Resources Protection Plan | Section 2.0 | To be updated in Final Version |
| **124** | Chapter 13 | Infrastructure and Services | 13.5.2.3 | Mobile construction camps will be used to house workers where temporary accommodations within communities are not available. | Contract Specifications | TBD- Once contract specifications are developed. | |
| **125** | Chapter 13 | Infrastructure and Services | 13.5.3.3 | Potable water will typically be transported to site and/or camps by truck, and will come from an approved water source. | Construction Environmental Protection Plan | POTABLE WATER (EI-11) | To be updated in Final Version |
| **126** | Chapter 13 | Infrastructure and Services | 13.5.3.3 | An Emergency Response Plan (ERP) will be developed. As part of the development and implementation of the ERP, Manitoba Hydro will work with local emergency responders to maintain appropriate emergency response times. | Construction Environmental Protection Plan | Emergency Response (EI-2.14) and Contractor developed ERP | |
| **127** | Chapter 13 | Infrastructure and Services | 13.5.3.3 | Project personnel will be made aware of the ERP and designated staff will receive ERP training. Among other elements, the plan will address handling and storage of materials, driving safety, animal encounters, emergency response communications, spill response, personnel injury response, and vehicle collisions. | Construction Environmental Protection Plan | Emergency Response (EI-2.05). Emergency Response (EI-2.14) | To be updated in Final Version |

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| **128** | Chapter 13 | Infrastructure and Services | 13.5.3.3 | Manitoba Hydro and its contractors will utilize Waste and Recycling Management Plans to manage waste and recycling in accordance with The Public Health Act and The Dangerous Goods Handling and Transportation Act. This plan will outline policies related to reducing the amount of solid waste generated; facilitating recycling wherever possible; and storing, transporting, and disposing of solid wastes at appropriate facilities. | Construction Environmental Protection Plan | Section 4.0 | |
| **129** | Chapter 13 | Infrastructure and Services | 13.5.3.3 | Subject to suitable soil conditions and drainage, and compliance with The Public Health Act and/or The Environment Act (Province of Manitoba 1996; 2015a), wastewater will be transported to an appropriate wastewater facility. | Construction Environmental Protection Plan | Appendix I.1 Waste and Recycling Management Planning Framework, page 5 | |
| **130** | Chapter 13 | Infrastructure and Services | 13.5.3.3 | As part of its Public and First Nation and Metis engagement processes, Manitoba Hydro will continue to engage with and share Project information with local governments, service providers, and/or businesses. | Communication Plan | TBD- Once plan is drafted. | |
| **131** | Chapter 13 | Infrastructure and Services | 13.5.4.3 | All materials transported by truck will be compliant with any weight restrictions or permits, Spring Road Restrictions (SRRs), or geometric constraints set out by MIT or municipal governments. | Construction Environmental Protection Plan | Access (PC-1.25) | |
| **132** | Chapter 13 | Infrastructure and Services | 13.5.2.3 | Workers will be hired locally or regionally, whenever possible. | Contract Specifications | TBD- Once contract specifications are developed. | |
| **133** | Chapter 13 | Infrastructure and Services | 13.5.4.3 | Manitoba Hydro will work with local authorities to address any damages to roads that occur as a result of the Project. | Communication Plan | TBD- Once plan is drafted. | |

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| **134** | Chapter 13 | Infrastructure and Services | 13.5.5.3 | • Manitoba Hydro will obtain the following permits, as required, from the following entities: o MIT: Permits are required for any construction above or below ground that falls within 250 feet of a PTH or 150 feet of a PR, including but not necessarily limited to those crossings listed in Table 13-15 o Pipeline and railway companies: Crossing agreements are required for transmission line crossings of pipelines and railways. | Construction Environmental Protection Plan | Access (PC-1.24) | |
| **135** | Chapter 13 | Infrastructure and Services | 13.5.5.3 | Manitoba Hydro will manage and monitor farm vehicle use within segments F and G and, where necessary, will work with operators/farmers to mitigate risks associated with induced current in these areas. | Communication Plan | TBD- Once plan is drafted. | |
| **136** | Chapter 13 | Infrastructure and Services | 13.5.5.3 | Manitoba Hydro will continue to engage with the entities responsible for underground infrastructures, roads, railways, and floodways (e.g., municipal governments, CN Rail) to identify areas where tower placement could interfere with underground infrastructures, maintenance activities, or future plans for expansion. | Communication Plan | TBD- Once plan is drafted. | |
| **137** | Chapter 13 | Infrastructure and Services | 13.5.5.3 | Manitoba Hydro will provide information for conducting aeronautical assessments, as required by Transport Canada/NAV Canada regulations, to identify potential interferences with airports/airstrips. | Design Standards | TP 1247 E Aviation - land Use in the Vicity of Aerodromes | |

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| **138** | Chapter 13 | Infrastructure and Services | 13.5.5.3 | The Project design will meet or exceed standards for setbacks and overhead clearance, including: o CAN/CSA-C22.3 No. 1-10 "Overhead Systems" which outlines electrical and safety clearances including road, pipeline, and rail crossing clearances o CAN/CSA 22.3 No. 60826-10 "Design Criteria for Overhead Transmission Lines" for structural and mechanical design o CAN/CSA-22.3 No. 6-M91 "Principles and Practices of Electrical Coordination between Pipelines and Electrical Supply Lines". | Design Standards | CAN/CSA-C22.3 No. 1-10 "Overhead Systems" CAN/CSA 22.3 No. 60826-10 "Design Criteria for Overhead Transmission Lines" CAN/CSA-22.3 No. 6-M91 "Principles and Practices of Electrical Coordination between Pipelines and Electrical Supply Lines" | |
| **139** | Chapter 13 | Infrastructure and Services | 13.5.6.1 | Industry Canada (2013) provides recommendations for acceptable levels of radio noise applicable to AC high voltage power systems, under the Radio communication Act described in Section 13.1.1.2. | Design Standards | Radio Communication Act described in Section 13.1.1.2 | |
| **140** | Chapter 13 | Infrastructure and Services | 13.5.4.3 | Vehicles transporting dangerous goods or hazardous products will display required placards and labeling in accordance with provincial legislation and Manitoba Hydro guidelines. | Construction Environmental Protection Plan | Vehicle and Equipment Maintenance (EI-9.06) | |
| **141** | Chapter 13 | Infrastructure and Services | 13.6.2.2 | Manitoba Hydro will communicate with accommodations providers regarding its projects to help them plan for and coordinate demand. It is expected that other project proponents will do the same for their projects. | Communication Plan | TBD- Once plan is drafted. | |
| **142** | Chapter 13 | Infrastructure and Services | 13.5.6.3 | Prior to final design, Manitoba Hydro will identify any potential for signal blockage or interference with communication providers (including radar and radio-telescopes) due to the Project, and will incorporate | Communication Plan | TBD- Once plan is drafted. | |

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| | | | | additional measures to avoid signal interference (e.g., through tower placement). | | | |
| **143** | Chapter 13 | Infrastructure and Services | 13.6.5.2 | The Project design will meet or exceed standards for setbacks and overhead clearance distances and induction including those outlined in Section 13.5.5.3. | Design Standards | CAN/CSA-C22.3 No. 1-10 "Overhead Systems" and CAN/CSA 22.3 No. 60826-10 "Design Criteria for Overhead Transmission Lines" | |
| **144** | Chapter 14 | Employment and Economy | 14.5.1.1 | Manitoba Hydro will contact First Nation and MMF representatives prior to Project start-up. | Communication Plan | TBD- Once plan is drafted. | |
| **145** | Chapter 14 | Employment and Economy | 14.5.1.1 | Manitoba Hydro will contact local municipal authorities prior to Project start-up. | Communication Plan | TBD- Once plan is drafted. | |
| **146** | Chapter 14 | Employment and Economy | 14.5.1.1 | Manitoba Hydro will work with the contractors through the contracting process to promote participation of Manitoba businesses in the Project. | Manitoba Hydro Procurement Policies | | |
| **147** | Chapter 14 | Employment and Economy | 14.5.1.1 | Manitoba Hydro works through the contracting process to actively promote participation of Manitoba businesses for the Project. Recruitment for the project will be tracked. | Manitoba Hydro Procurement Policies | | |
| **148** | Chapter 15 | Agriculture | 15.5.2.2.1 | Manitoba Hydro will pay compensation pursuant to the Landowner Compensation Program for damage to infrastructure/crops from construction or maintenance activities. | Manitoba Hydro Landowner Compensation Policy | | |

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| **149** | Chapter 15 | Agriculture | 15.5.2.2.2 | Effects of soil compaction and rutting will be mitigated by managing equipment traffic routes and activities for access route and bypass trail development, temporary sites' setup, clearing of the transmission ROW, installation of the transmission structures, and station site preparation. In accordance with the Access Management Plan, the Contractor will be restricted to established roads and trails and cleared construction areas. | Construction Environmental Protection Plan | Access Roads and Trails (PC-1.12) | |
| **150** | Chapter 15 | Agriculture | 15.5.2.2.2 | If working on saturated soils during non-frozen ground conditions, equipment and techniques that distribute ground pressure (e.g., Access Management Plan mats, geofabric and padding and corduroy) will be used to avoid compaction and admixing. | Construction Environmental Protection Plan | Agricultural Areas (EC-1) [If applicable], Access Roads and Trails (PC-1), Rights-of-Way (PC-8) | To be updated in Final Version |
| **151** | Chapter 15 | Agriculture | 15.5.2.2.2 | The transmission line will be constructed in agricultural areas when soils are not saturated to limit compaction, rutting and admixing, particularly in areas of high compaction risk. If this is not possible, other mitigation or rehabilitation measures will be conducted to reverse effects. | Construction Environmental Protection Plan | Agricultural Areas (EC-1.03) [If applicable] | To be updated in Final Version |
| **152** | Chapter 15 | Agriculture | 15.5.2.2.2 | Contractor-specific Erosion Protection and Sediment Control Plans will be prepared by the Contractor, accepted by Manitoba Hydro prior to construction and updated annually. | Construction Environmental Protection Plan | Erosion Protection and Sediment Control (EI-3.03) | |
| **153** | Chapter 15 | Agriculture | 15.5.2.2.1 | Areas of temporary soil disturbance on agricultural lands will be rehabilitated in accordance with the Rehabilitation and Weed Management Plan. | Rehabilitation and Invasive Species Management Plan | Sec 2.0 | |

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| **154** | Chapter 15 | Agriculture | 15.5.3.2.1 | Ancillary damage compensation could be provided for damage to infrastructure, including that for hog manure application, irrigation and livestock watering. | Manitoba Hydro Landowner Compensation Policy | | |
| **155** | Chapter 15 | Agriculture | 15.5.3.2.1 | Ancillary damage compensation could be provided for Prior to construction, if producers indicate the presence of manure application draglines, irrigation networks and watering infrastructure, they will be considered when tower siting, where possible, to reduce local effects. | Manitoba Hydro Landowner Compensation Policy | | |
| **156** | Chapter 15 | Agriculture | 15.5.3.2.2 | All equipment will arrive at the ROW or Project site clean and free of soil or vegetative debris (including weed seeds). | Construction Environmental Protection Plan | Vehicle and Equipment Maintenance (EI-9.07) | |
| **157** | Chapter 15 | Agriculture | 15.5.3.2.2 | Where construction or maintenance activities have the potential to interfere with field activities discussions with the landowner or producers will be held to move livestock/equipment during those activities. | Communication Plan | TBD- Once plan is drafted. | |
| **158** | Chapter 15 | Agriculture | 15.5.3.2.2 | As per the Transmission Line Business Unit biosecurity SOP (Manitoba Hydro 2015a), in areas of high biosecurity risk, Manitoba Hydro staff or contractors will: o schedule activities to occur when ground conditions are more favourable, if possible; o make sure that proper care and attention is paid to cleaning equipment and footwear prior to leaving the site, if activities cannot be rescheduled; o fine clean equipment to remove remaining soil using pressure washing to rinse off remaining soil or manure. Such fine cleaning should be done at the field approach, | Construction Environmental Protection Plan | Appendix F- Agricultural Biosecurity Standard Operating Procedures | |

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| | | | | preferably, but can be completed offsite. Vehicles must be cleaned before being taken to a different area. Use safety footwear that can be easily cleaned. Use a brush to remove visible soil or manure and disinfect footwear when leaving the field: - disinfectants such as 1% Virkon may be carried in a household spray bottle or a larger container if required - if washing footwear with disinfectant in the field, make sure wastewater is contained and appropriately disposed of offsite o fill out the Vehicle and Equipment Cleaning Record and submit with the Biosecurity Checklist. | | | |
| **159** | Chapter 15 | Agriculture | 15.5.3.2.1 | Ancillary damage compensation could be provided for yield reduction due to limited access for aerial and ground application of crop protection products or other important field operations during construction activities. | Manitoba Hydro Landowner Compensation Policy | | |
| **160** | Chapter 15 | Agriculture | 15.5.3.2.2 | Manitoba Hydro staff and contractors will follow and implement the Manitoba Hydro corporate policy on biosecurity and biosecurity SOP, respectively, during construction and operation and maintenance activities. | Construction Environmental Protection Plan | Appendix F- Agricultural Biosecurity Standard Operating Procedures | |
| **161** | Chapter 15 | Agriculture | 15.5.3.2.3 | Communication with landowners/producers regarding interruption of field operations (e.g., aerial or ground spraying and manure application) will be conducted prior to construction and prior to maintenance activities. | Communication Plan | TBD- Once plan is drafted. | |

| Commitment ID | Source (EIS Chapter, Hearing Transcript, Information Request) | Source Description | Source Location | Commitment | Mechanism for Implementation | Location within Document | Notes |
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| **162** | Chapter 15 | Agriculture | 15.5.3.2.2 | Asking producers or landowners to avoid spreading manure or pasturing livestock in the transmission line ROW prior to construction. | Communication Plan | TBD- Once plan is drafted. | |
| **163** | Chapter 15 | Agriculture | 15.5.3.2.3 | Compensation will be provided according to Manitoba Hydro Land Compensation Program for land permanently removed from agriculture due to structure presence. | Manitoba Hydro Landowner Compensation Policy | | |
| **164** | Chapter 15 | Agriculture | 15.5.3.2.3 | Compensation will be provided for yield reduction due to limited access for aerial and ground application of crop protection products during construction activities. | Manitoba Hydro Landowner Compensation Policy | | |
| **165** | Chapter 15 | Agriculture | 15.5.3.2.4 | Ancillary damage compensation is a one-time payment when Manitoba Hydro's use of the right-of-way directly or indirectly affects the use of the property. It will be provided for: o agricultural effects such as irrigation and drainage o constraint effects such as restricted access to adjacent lands o traditional effects such as highest and best use of land | Manitoba Hydro Landowner Compensation Policy | | |
| **166** | Chapter 15 | Agriculture | 15.5.3.2.4 | Construction damage compensation is offered to landowners who experience damage to their property due to the construction, operations and maintenance of the transmission line. | Manitoba Hydro Landowner Compensation Policy | | |
| **167** | Chapter 15 | Agriculture | 15.5.3.2.4 | Construction will be timed to reduce overlap with growing season, or activities will be limited during the growing season to avoid damage to crops. Where this is not feasible, Manitoba Hydro will pay compensation pursuant to the Landowner Compensation Program. | Manitoba Hydro Landowner Compensation Policy | | |

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| **168** | Chapter 15 | Agriculture | 15.5.3.2.4 | Structure Impact Compensation is a one-time payment to landowners for each transmission tower placed on land classed as agricultural. Structure Impact Compensation will cover:<br>- reduced productivity in an area of overlap around each tower structure<br>- additional time required to maneuver farm machinery around each structure<br>- double application of seed, fertilizer and weed control in the area of overlap around each tower structure | Manitoba Hydro Landowner Compensation Policy | | |
| **169** | Chapter 15 | Agriculture | 15.6.2.2 | Manitoba Hydro will continue to engage the agricultural community and stakeholders in project planning and identification of issues of concern, route selection, and the identification of mitigation measures. | Communication Plan | TBD- Once plan is drafted. | |
| **170** | Chapter 15 | Agriculture | 15.5.3.2.5 | Manitoba Hydro will work with dairy producers affected by the development to address concerns with respect to EMF and tingle voltage. | Communication Plan | TBD- Once plan is drafted. | |
| **171** | Chapter 15 | Agriculture | 15.6.2.2 | Manitoba Hydro will continue to evaluate design mitigation, including tower types, tower spacing, and tower placement to reduce agricultural land loss as much as feasible. | Communication Plan | TBD- Once plan is drafted. | |
| **172** | Chapter 15 | Agriculture | 15.5.2.2.1 | Compensation will be provided according to the Manitoba Hydro Land Compensation Program for: o damage to property, any relocation of incompatible agricultural buildings (e.g., grain bins and livestock overwintering shelter) o temporary loss of agricultural land | Manitoba Hydro Landowner Compensation Policy | | |

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| **173** | Chapter 15 | Agriculture | 15.5.2.2.1 | Manitoba Hydro will contact directly affected landowners to discuss how to reduce effects on their agriculture activities. | Communication Plan | TBD- Once plan is drafted. | |
| **174** | Chapter 15 | Agriculture | 15.5.3.2.1 | damage to infrastructure, including that for hog manure application, irrigation and livestock watering; | Manitoba Hydro Landowner Compensation Policy | | |
| **175** | Chapter 15 | Agriculture | 15.5.3.2.1 | Prior to construction, if producers indicate the presence of manure application draglines, irrigation networks and watering infrastructure, they will be considered when tower siting, where possible, to reduce local effects. | Communication Plan | TBD- Once plan is drafted. | |
| **176** | Chapter 16 | Land and Resource Use | 16.5.2.3 | Construction, operation and maintenance personnel will undertake activities in such a way to avoid affecting neighbouring properties, structures or operations. In the unlikely event that a landowner incurs damages, they are subject to compensation through Manitoba Hydro's existing compensation policies. | Manitoba Hydro Landowner Compensation Policy | | |
| **177** | Chapter 16 | Land and Resource Use | 16.5.2.3 | Implode compression conductor splicing will be limited to the extent possible on weekends and after normal working hours in residential areas. | Construction Environmental Protection Plan | Blasting and Exploding (PA-1.06) | |
| **178** | Chapter 16 | Land and Resource Use | 16.5.2.3 | Manitoba Hydro will provide the contractor with a stakeholder list with names, organizations and contact information for the purpose of contacting stakeholders as necessary. | Communication Plan | TBD- Once plan is drafted. | |

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| **179** | Chapter 16 | Land and Resource Use | 16.5.3.2 | Canadian Standard Association stream crossing clearance guidelines will be adhered to for the construction, operation and maintenance of the transmission lines. | Design Standards | CAN/CSA-C22.3 No. 1-10 "Overhead Systems" and CAN/CSA 22.3 No. 60826-10 "Design Criteria for Overhead Transmission Lines" | |
| **180** | Chapter 16 | Land and Resource Use | 16.5.3.2 | Clearing and disturbance will be limited to defined rights-of-way and associated access routes. | Construction Environmental Protection Plan | Clearing (PA-3.09) | |
| **181** | Chapter 16 | Land and Resource Use | 16.5.3.2 | Where applicable, provisions of the Navigation Protection Act related to the "Minor Works Order" for classes of work related to Aerial Cables – Power and Telecommunication will be adhered to. | Design Standards | Navigation Protection Act Minor Works Order | |
| **182** | Chapter 16 | Land and Resource Use | 16.5.4.2 | Existing access road and trails will be used to the extent possible. | Access Management Plan | Section 2.0 | To be updated in Final Version |
| **183** | Chapter 16 | Land and Resource Use | 16.5.4.2 | Hunting and harvesting of wildlife, or possession of firearms by Project staff will not be permitted while working on project sites. | Construction Environmental Protection Plan | Construction Camps (PC-3.09) [If applicable] | |
| **184** | Chapter 16 | Land and Resource Use | 16.5.4.2 | Manitoba Hydro will contact lodge operators, outfitters and recreational resource user associations to the extent feasible and practical prior to project start-up. | Communication Plan | TBD- Once plan is drafted. | |
| **185** | Chapter 16 | Land and Resource Use | 16.5.5.2 | Manitoba Hydro will work with mining/quarry operators to determine if blasting mats or other mitigation measures are required during quarry operations within or adjacent to the ROW. | Operations and Maintenance Environmental Protection Plan | TBD- Once plan is drafted. | |
| **186** | Chapter 16 | Land and Resource Use | 16.5.5.2 | Manitoba Hydro will contact local resource users to the extent feasible and practical prior to Project start-up. | Communication Plan | TBD- Once plan is drafted. | |

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| **187** | Chapter 16 | Land and Resource Use | 16.5.6.2 | All elm (*Ulmus americana*) wood will be burnt, chipped immediately or disposed of at approved municipal disposal sites to prevent the spread of Dutch Elm Disease (Manitoba Government 2013). | Construction Environmental Protection Plan | Access Roads and Trails (PC-1),Clearing (PA-3),Rights-of-Way (PC-8) | To be updated in Final Version |
| **188** | Chapter 16 | Land and Resource Use | 16.5.6.2 | Existing access roads, trails or cut lines will be used to the extent possible. Permission to use existing resource roads will be obtained, where applicable. | Access Management Plan | Access Roads and Trails (PC-1.12) | |
| **189** | Chapter 16 | Land and Resource Use | 16.5.6.2 | Manitoba Hydro will re-establish shelterbelts outside of the ROW where possible in such areas affected. | Construction Environmental Protection Plan | | To be updated in Final Version |
| **190** | Chapter 16 | Land and Resource Use | 16.5.6.2 | Farmsteads and rural residences with shelterbelts established for aesthetic and environmental values affected by Project activities will be compensated by Manitoba Hydro. | Manitoba Hydro Landowner Compensation Policy | | |
| **191** | Chapter 16 | Land and Resource Use | 16.5.7.2 | A qualified drilling contractor with appropriate experience will be present for work in areas underlain by artesian aquifers. | Construction Environmental Protection Plan | Drilling (PA-6), Groundwater (EC-4) | To be updated in Final Version |
| **192** | Chapter 16 | Land and Resource Use | 16.5.7.2 | Emergency response plans will be in place for sealing/grouting and pumping out drill holes in artesian well areas. | Construction Environmental Protection Plan | Drilling (PA-6), Groundwater (EC-4) | To be updated in Final Version |
| **193** | Chapter 16 | Land and Resource Use | 16.5.7.2 | Follow-up inspections of installed foundations will be conducted to monitor for excess water leakage. | Operations and Maintenance Environmental Protection Plan | TBD- Once plan is drafted. | |
| **194** | Chapter 16 | Land and Resource Use | 16.5.7.2 | If herbicides are required to control vegetation growth, all applicable permits will be obtained and provincial regulations adhered to for pesticide use. | Integrated Vegetation Management Plan | TBD- Once plan is drafted. | |
| **195** | Chapter 16 | Land and Resource Use | 16.5.7.2 | Monitoring of groundwater levels in drill holes will be conducted during drilling and foundation installation. | Construction Environmental Protection Plan | Drilling (PA-6), Groundwater (EC-4) | To be updated in Final Version |

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| **196** | Chapter 16 | Land and Resource Use | 16.5.7.2 | Precautions will be taken where there is potential for mixing surface and groundwater to prevent interconnection of these waters. | Construction Environmental Protection Plan | Drilling (PA-6), Groundwater (EC-4) | To be updated in Final Version |
| **197** | Chapter 17 | Visual Quality | 17.5.3 | Approved clearing boundaries will be clearly delineated by flagging prior to clearing or equipment will be guided through the use of Global Positioning Systems to keep clearing activities within the project. | Construction Environmental Protection Plan | Clearing (PA-3.18) | To be updated in Final Version |
| **198** | Chapter 17 | Visual Quality | 17.5.3 | With the exception of reflective bird diverters at areas of high bird-wire collision potential, non-reflective galvanized tower materials are which reduces the visual contrast with background. | Contract Specifications | TBD- Once contract specifications are developed. | |
| **199** | Chapter 17 | Visual Quality | 17.5.3 | Efforts will be made during the design process to locate transmission towers to reduce visual interference in areas identified during public engagement (i.e., Ridgeland Cemetery). | Tower Spotting | | |
| **200** | Chapter 17 | Visual Quality | 17.5.3 | Where practical, towers will be sited as far from viewpoints of concern as possible to reduce the visible prominence. | Tower Spotting | | |
| **201** | Chapter 18 | Human Health Risk | 18.5.2.2 | Carrying out burning during winter season only, under supervision, and away from permanent human receptor locations, to confine fire to the cleared Project area and limit effects of offsite drift of smoke. | Construction Environmental Protection Plan | Burning (PA-2.08) | To be updated in Final Version |
| **202** | Chapter 18 | Human Health Risk | 18.5.2.2 | Mud, dust and vehicle emissions will be managed in a manner that allows for safe and continuous public activities near construction sites where applicable. | Construction Environmental Protection Plan | Built-up and Populated Areas (EC-2.02) [If applicable] | |
| **203** | Chapter 18 | Human Health Risk | 18.5.3.2 | Herbicides used by Manitoba Hydro on ROWs are formulated to target woody vegetation and broad-leafed plants while leaving grasses largely | Integrated Vegetation Management Plan | TBD- Once plan is drafted. | |

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| | | | | unaffected. | | | |
| **204** | Chapter 18 | Human Health Risk | 18.5.3.2 | Manitoba Hydro is required to adhere to all laws and regulations regarding herbicide use, which will mitigate the potential for harm. Label restrictions will be adhered to during application. | Integrated Vegetation Management Plan | TBD- Once plan is drafted. | |
| **205** | Chapter 18 | Human Health Risk | 18.5.3.2 | Sensitive areas will not be treated with herbicides, such as those used for gathering berries and harvesting other types of traditional plant and animal country foods, that have been identified through ATK. | Operations and Maintenance Environmental Protection Plan | TBD- Once plan is drafted. | |
| **206** | Chapter 18 | Human Health Risk | 18.5.3.2 | Manitoba Hydro will develop an integrated vegetation management plan for the control of woody and non-woody vegetation along the transmission line ROW and at other Project sites. | Integrated Vegetation Management Plan | TBD- Once plan is drafted. | |
| **207** | Chapter 18 | Human Health Risk | 18.5.4.2 | Use of passive or active techniques to minimize noise such as construction of barriers or noise cancellation to the extent feasible. | Construction Environmental Protection Plan | Built-up and Populated Areas (EC-2) [If applicable] | To be updated in Final Version |
| **208** | Chapter 19 | Community Health and Well-Being | 19.5.2.2 | Manitoba Hydro will work with the contractors through the procurements process to promote participation of local businesses in the Project. | Manitoba Hydro Procurement Policies | | |
| **209** | Chapter 19 | Community Health and Well-Being | 19.5.2.2 | Continue to engage with and share Project information, such as workforce numbers and construction schedules, with local communities, and Aboriginal groups. | Communication Plan | TBD- Once plan is drafted. | |
| **210** | Chapter 19 | Community Health and Well-Being | 19.5.3.2 | Camp contractors are required to maintain a clean camp plan that meets all applicable provincial regulations and public health standards. | Construction Environmental Protection Plan | Construction Camps (PC-3) [If applicable] | To be updated in Final Version |

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| **211** | Chapter 19 | Community Health and Well-Being | 19.5.3.2 | Work with the relevant regional health authorities to ensure adequate and appropriate strategies are put in place to reduce or eliminate the spread of infection at worksites, including the transport of severely contagious workers, and ensure sanitation standards meet public health guidelines. | Communication Plan | TBD- Once plan is drafted. | |
| **212** | Chapter 19 | Community Health and Well-Being | 19.5.3.2 | Continuous communication with communities to address complaints or concerns related to Project activities or workers. | Communication Plan | TBD- Once plan is drafted. | |
| **213** | Chapter 19 | Community Health and Well-Being | 19.5.4.2 | A communication protocol will be developed to notify affected parties of blasting operations and conductor splicing. Affected parties may include Manitoba Conservation and Water Stewardship, RCMP, municipalities, landowners and resource users. | Communication Plan | TBD- Once plan is drafted. | |
| **214** | Chapter 19 | Community Health and Well-Being | 19.5.4.2 | Construction activities and equipment will be managed to avoid damage and disturbance to adjacent properties, structures and operations. | Construction Environmental Protection Plan | Built-up and Populated Areas (EC-2.01) | |
| **215** | Chapter 19 | Community Health and Well-Being | 19.5.4.2 | Mitigation measures identified in Chapter 17 to reduce adverse effects on visual quality, and associated stress and annoyance related to changes in viewscapes. | Tower Spotting | | |
| **216** | Chapter 19 | Community Health and Well-Being | 19.5.4.2 | Noisy construction activities where noise and vibration may cause disturbance and stress in built-up areas will be limited to daylight hours. | Construction Environmental Protection Plan | Built-up and Populated Areas (EC-2.03) [If applicable] | |
| **217** | Chapter 19 | Community Health and Well-Being | 19.5.4.2 | Informing nearby residents of major noise-generating activities such as the use of implode sleeves for conductor splicing and potential helicopter use for tower installation. | Communication Plan | TBD- Once plan is drafted. | |

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| **218** | Chapter 19 | Community Health and Well-Being | 19.5.4.2 | Manitoba Hydro will develop, organize, and participate in ongoing Public engagement and First Nation and Metis engagement processes activities in order to provide timeline and up to- date information regarding Project activities and to receive feedback. | Communication Plan | TBD- Once plan is drafted. | |
| **219** | Chapter 19 | Community Health and Well-Being | 19.5.4.2 | Manitoba Hydro will enter into easement agreements with private landowners whose land is crossed by the transmission line. | Communication Plan | TBD- Once plan is drafted. | |
| **220** | Chapter 19 | Community Health and Well-Being | 19.5.4.2 | Continuing to address concerns related to EMF and providing factual, science-based information to concerned individuals and organizations. | Communication Plan | TBD- Once plan is drafted. | |
| **221** | Chapter 19 | Community Health and Well-Being | 19.5.4.2 | The final detailed Project design will take in to account standards for setbacks and overhead clearance, including CSA standards such as CAN/CSA-C22.3 No. 1-10 “Overhead Systems” and CAN/CSA 22.3 No. 60826-10 “Design Criteria for Overhead Transmission Lines”. | Design Standards | CAN/CSA-C22.3 No. 1-10 “Overhead Systems” and CAN/CSA 22.3 No. 60826-10 “Design Criteria for Overhead Transmission Lines” | |
| **222** | Chapter 19 | Community Health and Well-Being | 19.5.5.2 | Contractor will be restricted to established roads and trails, and cleared construction areas in accordance with the Access Management Plan. | Construction Environmental Protection Plan | Access (PC-1.09) | |
| **223** | Chapter 19 | Community Health and Well-Being | 19.5.5.2 | Applying applicable buffers and setbacks during clearing activities for bird nesting and breeding sites. | Construction Environmental Protection Plan | Appendix E: Buffers and Setbacks | |
| **224** | Chapter 19 | Community Health and Well-Being | 19.5.5.2 | Bypass trails, sensitive sites and buffer areas will be clearly marked prior to clearing. | Construction Environmental Protection Plan | Clearing (PA-3.04) | |
| **225** | Chapter 19 | Community Health and Well-Being | 19.5.5.2 | Clearing within environmentally sensitive areas will be conducted in a manner that limits disturbance to existing organic soil layer. | Construction Environmental Protection Plan | Clearing (PA-3.11) | |

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| **226** | Chapter 19 | Community Health and Well-Being | 19.5.5.2 | In situations where the ROW does not have completely frozen or have dry ground conditions alternate mitigation such as construction mats may be used. | Construction Environmental Protection Plan | Rights-of-Way (PC-8.09) | |
| **227** | Chapter 19 | Community Health and Well-Being | 19.5.5.2 | Installing bird diverters on skywires in areas of high collision risk potential. | Construction Environmental Protection Plan | Wildlife Protection (EC-9.02) | |
| **228** | Chapter 19 | Community Health and Well-Being | 19.5.5.2 | Manitoba Hydro will consider non-chemical vegetation management in clearly identified sensitive sites that contain plants that are of importance to Aboriginal harvesters. | Integrated Vegetation Management Plan | TBD- Once plan is drafted. | |
| **229** | Chapter 19 | Community Health and Well-Being | 19.5.5.2 | There will be no herbicides used in the clearing phase of construction. | Construction Environmental Protection Plan | Clearing (PA-3) | To be updated in Final Version |
| **230** | Chapter 19 | Community Health and Well-Being | 19.5.5.2 | Where access to agricultural land is necessary, the Agricultural Biosecurity Transmission Standard Operating Procedure must be followed. | Construction Environmental Protection Plan | Agricultural Areas (EC-1.09) [If applicable] | |
| **231** | Chapter 19 | Community Health and Well-Being | 19.5.5.2 | Contractor specific Erosion Protection and Sediment Control Plans will be prepared by the Contractor, accepted by Manitoba Hydro prior to construction and updated annually. | Construction Environmental Protection Plan | Section 4.0 | |
| **232** | Chapter 19 | Community Health and Well-Being | 19.5.5.2 | The Contractor will be responsible for developing, implementing and maintaining Erosion Protection and Sediment Control Plans and procedures to be put in place prior to commencement of construction activities. | Construction Environmental Protection Plan | Erosion Protection and Sediment Control (EI-3.08) | |
| **233** | Chapter 19 | Community Health and Well-Being | 19.5.5.2 | Through ongoing engagement processes notifications to interested First Nations and the MMF advising on when/where construction is occurring. | Communication Plan | TBD- Once plan is drafted. | |

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| **234** | Chapter 19 | Community Health and Well-Being | 19.5.5.2 | Locations of equipment cleaning sites (when not contained within station boundaries) will be recorded and monitored during the following growing season as part of weed control in accordance with Rehabilitation and Weed Management Plan. | Environmental Monitoring Plan | Section 4.4.3 | To be updated in Final Version |
| **235** | Chapter 19 | Community Health and Well-Being | 19.5.5.2 | Weed control along access roads and trails, borrow pits, quarries, construction camps, marshalling yards will be in accordance with Rehabilitation and Weed Management Plan. | Rehabilitation and Invasive Species Management Plan | Sec 3.2 | |
| **236** | Chapter 19 | Community Health and Well-Being | 19.5.5.2 | Communicate and share resources on human health findings with local residents to reduce perceived risks related to EMF exposure and other environmental exposures, such as industrial odours, noise and air pollution. | Communication Plan | TBD- Once plan is drafted. | |
| **237** | Chapter 19 | Community Health and Well-Being | 19.5.6.2 | Group transportation (e.g., buses, crew vans) will be used to transport workers between camps and the worksites, and between temporary accommodations in nearby communities and the worksites. | Contract Specifications | TBD- Once contract specifications are developed. | |
| **238** | Chapter 19 | Community Health and Well-Being | 19.5.6.2 | Coordinate with local agencies (including RCMP, Emergency Preparedness, hospitals, and air ambulances) on emergency response plans. | Construction Environmental Protection Plan | Emergency Response (EI-2) | To be updated in Final Version |
| **239** | Chapter 19 | Community Health and Well-Being | 19.5.6.2 | Maintain firefighting trained workers and fire suppression systems at construction sites and Camps. | Construction Environmental Protection Plan | Emergency Response (EI-2) | To be updated in Final Version |
| **240** | Chapter 19 | Community Health and Well-Being | 19.5.6.2 | Project personnel will be made aware of the Emergency Response Plan and designated staff will receive Emergency Response Plan training. | Construction Environmental Protection Plan | Emergency Response (EI-2) | To be updated in Final Version |

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| **241** | Chapter 19 | Community Health and Well-Being | 19.5.6.2 | Provide first aid supplies and facilities, and trained first aid personnel to deal with minor injuries. | Construction Environmental Protection Plan | Emergency Response (EI-2) | To be updated in Final Version |
| **242** | Chapter 19 | Community Health and Well-Being | 19.5.6.2 | Liaise with the Southern Health RHA about the possibility of coordinating primary care services with the mobile clinic around Stuartburn and Piney. | Communication Plan | TBD- Once plan is drafted. | |
| **243** | Chapter 19 | Community Health and Well-Being | 19.5.6.2 | Share Project information, including workforce information and accommodation requirements, with local governments, service providers, and businesses, as appropriate, so they are aware of anticipated Project-related demands, allowing them to identify and address potential service gaps or issues. | Communication Plan | TBD- Once plan is drafted. | |
| **244** | Chapter 19 | Community Health and Well-Being | 19.6.2.2 | Conducting construction activities as per applicable noise bylaws. | Construction Environmental Protection Plan | Built-up and Populated Areas (EC-2) | To be updated in Final Version |
| **245** | Chapter 19 | Community Health and Well-Being | 19.6.2.2 | Engage and share Project information with local residents and First Nation and Metis engagement processes so they are aware of future Manitoba Hydro projects. | Communication Plan | TBD- Once plan is drafted. | |
| **246** | Clean Environment Commission | Hearing Transcripts | May 15, 2017, Page 1126, Line 15 | Manitoba Hydro has committed that it will meet the specifications as outlined in ISO 14001, as well as the regulatory system and any other voluntary initiatives to which Manitoba Hydro has enrolled?<br>MR. STUART: "I would say yes, that is correct." | Manitoba Hydro Environmental Management Policy | | |
| **247** | Clean Environment Commission | Hearing Transcripts | May 15, 2017, Page 1139, Line 24 | Manitoba Hydro has also committed to annual reports for the MMTP, and Manitoba Hydro has committed to make those publicly available on the project website. And that's CAC IR 006. Would you agree?<br>MR. MATTHEWSON: "Yes, Manitoba Hydro has made those | Environmental Monitoring Plan | Section 6 | |

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| | | | | commitments." | | | |
| **248** | Clean Environment Commission | Hearing Transcripts | May 15, 2017, Page 1232, Line 19 | MR. MATTHEWSON: "Yes, I would agree. That's why, in my previous response, that we would notify communities if a spill would occur within a traditional gathering area that was identified in our environmental protection plan, that a community made us aware of." | Communication Plan | TBD- Once plan is drafted. | |
| **249** | Clean Environment Commission | Hearing Transcripts | May 23, 2017, Page 2194, Line 17 | Create an Indigenous community monitoring working group. | Indigenous Monitoring Working Group | | |
| **250** | Clean Environment Commission | Hearing Transcripts | May 23, 2017, Page 2199, Line 20 | Develop an Operations and Maintenance EPP prior to in-service phase. | Operations and Maintenance Environmental Protection Plan | | |
| **251** | Clean Environment Commission | Hearing Transcripts | May 23, 2017, Page 2258, Line 1 | A copy of the EPP will be shared with the ongoing First Nations and Metis engagement process prior to in-service phase. | Communication Plan | TBD- Once plan is drafted. | |
| **252** | Clean Environment Commission | Hearing Transcripts | May 23, 2017, Page 2265, Line 11 | Manitoba Hydro will take steps to minimize the impact that smoke from slash burning may have on landowners, and specifically landowner residences. | Construction Environmental Protection Plan | Burning (PA-2.08) | To be updated in Final Version |
| **253** | EC/MH-015 | Vegetation and Wetlands | EC/MH-015 | Observations of species at risk collected to date have been shared with the Manitoba Conservation Data Centre and will continue to be shared annually as monitoring programs gather data. | Environmental Monitoring Plan | Section 4.4.2 | |

| Commitment ID | Source (EIS Chapter, Hearing Transcript, Information Request) | Source Description | Source Location | Commitment | Mechanism for Implementation | Location within Document | Notes |
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| **254** | EC/MH-016 | Wildlife and Wildlife Habitat | EC/MH-016 | Should any sensitive areas be found, mitigative measures will be applied. Sensitive areas found on the ROW will be flagged for avoidance and if previously unidentified species or ecosystems of concern are encountered, they will be noted for potential additional mitigation. A preconstruction survey is planned to capture areas along the FPR that may have been missed in earlier surveys. | Environmental Monitoring Plan | Section 4.4.2 | |
| **255** | EC/MH-023 | Wildlife and Wildlife Habitat | EC/MH-023 | Manitoba Hydro appreciates this input and will add potential bear den identification descriptions including open ground nests as part of a bear den discovery protocol to its Construction Environmental Protection Plan and the Environmental Monitoring Plan. | Construction Environmental Protection Plan | Section 2.4.3 and in Wildlife Protection (EC-9) | To be updated in Final Version |
| **256** | MCWS/MH-I-006 | Wildlife and Wildlife Habitat | MCWS/MH-I-006 | During construction, Manitoba Hydro does not foresee any additional risks to Peregrine Falcons, however, as per the Construction Environmental Protection Plan, environmental staff working on the project will monitor for bird interactions with construction activities and report any mortalities to Manitoba Conservation and Water Stewardship (MCWS). | Construction Environmental Protection Plan | Wildlife Protection (EC-9.01) | |
| **257** | MCWS/MH-I-006 | Wildlife and Wildlife Habitat | MCWS/MH-I-006 | Manitoba Hydro will evaluate GPS data of falcon movements 20 acquired through the above PhD study of birds released at Parklands Mews and discuss potential strategies with Parkland Mews to mitigate the close proximity of the breeding site with the project that could include bird diverters and perch deterrents. | Environmental Monitoring Plan | Section 4.6.3.2 | |

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| **258** | MCWS/MH-I-011 | Vegetation and Wetlands | MCWS/MH-I-011 | Manitoba Hydro will compensate for relocation, compensate for loss or will work with the landowner to determine other options to maintain the woodlot and shelterbelt where possible. | Manitoba Hydro Landowner Compensation Policy | | |
| **259** | MCWS/MH-I-049 | Vegetation and Wetlands | MCWS/MH-I-049 | Manitoba Hydro will consult with Manitoba Wildlife and Fisheries Branch to identify potential tall grass prairie along the Final Preferred Route PDA for potential inspection and further mitigation. | Environmental Monitoring Plan | Section 7.2.2 | |
| **260** | MCWS/MH-I-059 | Wildlife and Wildlife Habitat | MCWS/MH-I-059 | Manitoba Hydro will expand its proposed Amphibian monitoring program to include eastern tiger salamander. Manitoba Hydro will share any observations of eastern tiger salamander with the Manitoba Conservation Data Centre. | Environmental Monitoring Plan | Section 4.5.1 | |
| **261** | MCWS/MH-I-063 | Wildlife and Wildlife Habitat | MCWS/MH-I-063 | The Environmental Monitoring Plan will be revised to further outline Manitoba Hydro's adaptive management approach including decision triggers and actions. | Environmental Monitoring Plan | Various sections | Completed in April 12/2017 Draft |
| **262** | MCWS/MH-I-064 | Wildlife and Wildlife Habitat | MCWS/MH-I-064 | Manitoba Hydro is committed to conducting surveys and a monitoring plan for northern leopard frogs to ensure cooperation and compliance with the *Federal Species at Risk Act*. However, in light of recommendations provided here by Manitoba Conservation and Water Stewardship, Manitoba Hydro will expand this northern leopard frog monitoring program to also include eastern tiger salamanders. These surveys will consist of visual encounter surveys at suitable wetland sites. In total, two years of baseline data will be collected prior to construction. | Environmental Monitoring Plan | Section 4.5.1 | |

| Commitment ID | Source (EIS Chapter, Hearing Transcript, Information Request) | Source Description | Source Location | Commitment | Mechanism for Implementation | Location within Document | Notes |
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| **263** | MCWS/MH-I-065 | Wildlife and Wildlife Habitat | MCWS/MH-I-065 | Manitoba Hydro will update Section 4.4.7 of Appendix 22C to further describe the distribution/occurrence mapping survey and camera trap surveys conducted pre/during/post construction. This update will describe not only ungulates but also predators such as wolves and coyotes. | Environmental Monitoring Plan | Section 7.3.3 | |
| **264** | MCWS/MH-I-069 | Wildlife and Wildlife Habitat | MCWS/MH-I-069 | Mineral lick surveys should be conducted in spring/early summer, not fall. Manitoba Hydro will correct this in the final version of the Environmental Monitoring Plan to reflect a spring/early summer survey period for mineral lick surveys. | Environmental Monitoring Plan | Section 4.5.8 | To be updated in Final Version |
| **265** | MCWS/MH-I-075 | Wildlife and Wildlife Habitat | MCWS/MH-I-075 | Manitoba Hydro notes this request and will modify the heading for Section 7.3.3.3 to be "Ungulates and Bears" in the final Environmental Monitoring Plan. | Environmental Monitoring Plan | Section 7.3.3 | To be updated in Final Version |
| **266** | MCWS/MH-I-077 | Wildlife and Wildlife Habitat | MCWS/MH-I-077 | This monitoring will be conducted using a before-after study design approach and will utilize both individual animal counts and tracks, with two years of baseline aerial survey data collected in 2015 and 2016. The Environmental Monitoring Plan will be revised to further illustrate and explain this methodology. | Environmental Monitoring Plan | Section 7.3.3.1 | To be updated in Final Version |
| **267** | MCWS/MH-I-079 | Wildlife and Wildlife Habitat | MCWS/MH-I-079 | The updated Environmental Monitoring Plan will describe the continued baseline data collection efforts along with analysis methodology illustrating how Manitoba Hydro will incorporate "control" areas. | Environmental Monitoring Plan | Section 7.3.3.1 | To be updated in Final Version |

| Commitment ID | Source (EIS Chapter, Hearing Transcript, Information Request) | Source Description | Source Location | Commitment | Mechanism for Implementation | Location within Document | Notes |
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| **268** | MCWS/MH-I-081 | Wildlife and Wildlife Habitat | MCWS/MH-I-081 | Nonetheless, if elk are identified to interact with the Project area during the preconstruction, construction, operation and maintenance phases, Manitoba Hydro commits to immediately providing this information to Manitoba Conservation and Water Stewardship and then jointly identifying what, if any, mitigation measures should be implemented as a part of adaptive management. | Environmental Monitoring Plan | Section 4.5.8 | |
| **269** | MCWS/MH-I-110 | Wildlife and Wildlife Habitat | MCWS/MH-I-110 | Mitigation for black bears will be among the items detailed in the Construction Environmental Protection Plan, currently under development. It will include contacting Manitoba Conservation and Water Stewardship as soon an possible when a bear den is identified; establishing a 150m buffer around identified bear dens within which no machinery with potential to disturb a bear may operate; flagging to mark the perimeter; and, monitoring the site to ensure that project related disturbances do not resume until after the den has been vacated. | Construction Environmental Protection Plan | Buffers and setbacks Section and in Wildlife Protection (EC-9) | To be updated in Final Version |
| **270** | MCWS/MH-I-117 | Wildlife and Wildlife Habitat | MCWS/MH-I-117 | Manitoba Hydro is interested in building and maintaining good communication with the Wildlife Branch as it relates to project monitoring and will make efforts to advise when aircraft will be used for project monitoring. | Communication Plan | TBD- Once plan is drafted. | |

| Commitment ID | Source (EIS Chapter, Hearing Transcript, Information Request) | Source Description | Source Location | Commitment | Mechanism for Implementation | Location within Document | Notes |
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| **271** | MCWS/MH-I-119 | Access Management | MCWS/MH-I-119 | Manitoba Hydro will implement decommissioning strategies seasonally during construction as described in response to MCWS_MH-I-120 along with currently planning to only to utilize existing or previously used roads and trails for temporary construction access routes. | Access Management Plan | Section 4.8 | To be updated in Final Version |
| **272** | MCWS/MH-I-125 | Access Management | MCWS/MH-I-125 | Manitoba Hydro will conduct terrain analysis to identify "Potential By-pass Trail Areas" and illustrate those areas in the revised Access Management Plan for approval. New access routes and unidentified by-pass trails on Crown Land will be submitted to the local IRMT for review and approval. | Access Management Plan | Section 4.4 | |
| **273** | MCWS/MH-I-127 | Access Management | MCWS/MH-I-127 | Manitoba Hydro will incorporate the proposed changes into the final version of the Construction Access Management Plan. See MCWS/MH-I-127 for list of proposed changes | Access Management Plan | Various sections | |
| **274** | MCWS/MH-I-128 | Access Management | MCWS/MH-I-128 | Manitoba Hydro will engage with landowners and Manitoba Conservation and Water Stewardship on private and crown land respectively to develop and implement access route decommissioning and rehabilitation prescriptions for each of its access routes where applicable. | Access Management Plan | Section 4.8 | |
| **275** | MCWS/MH-I-129 | Access Management | MCWS/MH-I-129 | Manitoba Hydro will expand Section 5.0 Operations and Maintenance Access Management Plan Development with the following text: (See MCWS/MH-I-129 for specific text) | Access Management Plan | Section 5 | |
| **276** | MCWS/MH-I-141 | Vegetation and Wetlands | MCWS/MH-I-141 | Manitoba Hydro will work with the landowner to clear and pile the timber off the right of way for his | Clearing Management Plan | TBD- Once plan is drafted. | |

| Commitment ID | Source (EIS Chapter, Hearing Transcript, Information Request) | Source Description | Source Location | Commitment | Mechanism for Implementation | Location within Document | Notes |
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| | | | | ongoing use. | | | |
| **277** | MCWS/MH-I-141 | Vegetation and Wetlands | MCWS/MH-I-141 | The remaining area of right-of-way on Mr. Lambert's property may be selectively cleared of tree species to retain the existing fruit bearing shrubs where feasible. | Clearing Management Plan | TBD-Once plan is drafted. | |

# Appendix B: Manitoba Hydro response to recommendations made by hearing participants

MANITOBA-MINNESOTA TRANSMISSION PROJECT (MMTP)
MANITOBA HYDRO'S RESPONSE TO VARIOUS POTENTIAL LICENCE CONDITIONS

| # | Subject | Reference | Proposed Condition Details | Manitoba Hydro Response |
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| A | GRANTING LICENCE | | | |
| A.1 | Staged licence | Southeast Stakeholders' Coalition (SSC), May 23, Transcript Page 2268 | "...if the Minister proceeds with a staged licensing, or a licensing of preliminary steps before a full licence is granted, does the plan, as currently drafted, work with that type of a licensing decision as opposed to the project being fully licensed at the outset, or would revisions and updating be required?"<br><br>"So just to break that down a little bit, so if the Minister grants a staged licence so that the part of project that goes, say from Dorsey to the part of the line just south of Anola, along the Riel to Vivian transmission | A staged licence condition is not feasible and would have major schedule implications. Section 58.11 of the National Energy Board Act prohibits the construction of any portion of an international power line until a permit or certificate is issued under the Act. Applications for permits/ certificates require a description of the entire route for an International Power Line (IPL) , from the originating station to the international border. Manitoba Hydro will not start construction of the MMTP until it has received National Energy |

| # | Subject | Reference | Proposed Condition Details | Manitoba Hydro Response |
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| | | | corridor, that part gets licensed but other parts don't..." | Board authorization. |
| | | Southeast Stakeholders' Coalition (SSC) Written Closing Argument | "In the alternative, the Commission should recommend that the Minister only license the non-contentious components of the MMTP (Dorsey to Anola and south of the Watson P. Davidson Wildlife Management Area to the Piney border crossing) while a more appropriate route alternative is developed for the contentious component." | |
| | | Southeast Stakeholders' Coalition (SSC) Written Closing Argument | "The Coalition therefore respectfully submits that the Commission should: (a) decline to recommend that the Minister issue the licence requested by Manitoba Hydro until such time as: (i) Manitoba Hydro has | |

| # | Subject | Reference | Proposed Condition Details | Manitoba Hydro Response |
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| | | | developed a more appropriate alternative route for the MMTP;<br>(ii) such route has been recommended to the Minister by the Commission following further public hearings" | |
| B | COMMUNICATION, NOTIFICATION & PROJECT WEBSITE | | | |
| B.1 | Notify First Nations of Right-of-Way (ROW) changes in parallel with regulator | Dakota Plains Wahpeton Oyate (DPWO), May 23, Transcript Pages 2291 -2292 | "If you do get off the right-of-way and you do need to make an adjustment, as well as advising the director, would it be reasonable for a condition of the licence to be that you also advise the affected stakeholders?" | The National Energy Board posts all applications to modify international power line on their public registry. And in terms of direct notification to third parties, Manitoba Hydro will provide such notification where directed to by the National Energy Board, or required under the National Energy Board Act. Manitoba Hydro also provides these notifications about route modifications, as an example, on to the |

| # | Subject | Reference | Proposed Condition Details | Manitoba Hydro Response |
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| | | | | provincial public registry, so that all can see. The purpose of Manitoba Sustainable Development's public registry is for everybody to have the same information. |
| B.2 | Project website | Consumers Association of Canada (CAC) Closing Argument Presentation, June 5, Transcript Page 3769 | "Manitoba Hydro should maintain a project website for the life of the project which contains all the information committed to by the proponent in the EIS." | Manitoba Hydro has established a website for the Project. As per CAC-IR-007, "The length of time the project website will be maintained will be based on public interest, need and technology." |
| | | Peguis First Nation (PFN) Closing Argument, June 5, Transcript Page 3854 | "a website should be maintained, kept up to date, provision for feedback" | |
| C | CROWN LAND ACQUISITION | | | |
| C.1 | Zero net loss of Crown land | Southern Chiefs' Organization (SCO) Closing Argument, June 5, Transcript Page 3792 | "SCO recommends that a zero net loss of Crown land be an express licence condition for the MMTP project." | The process for acquisition of Crown Land is determined by the Lands Branch of Manitoba and Crown Lands and Property Agency. |

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| | | | | As noted in Mr. Bedford's closing argument, Manitoba Hydro is not considering such offsets as purchasing land and transferring it to the province so that it can become Crown land. |
| D | RIGHT-OF-WAY (ROW) WIDTH | | | |
| D.1 | Re-examine ROW width | Dakota Plains Wahpeton Oyate (DPWO), May 9, Transcript Page 257 | "If it was a condition of the licence that you may ultimately receive for this project that you re-examine the width of the right-of-way, in light of what have other surrounding constituencies seem to be able to do this work in, would you ever see a possibility of Hydro finding a crossarm width or a safe operating procedure that would allow the cut through Manitoba to be reduced by 10 or 20 or 30 per | Manitoba Hydro has considered safe working procedures in the development of a tower head geometry that permits safe live line work within the tower window -- something that is currently not permitted on the existing M602F line following two serious live line accidents (1997, 2002). The required design modification resulted in an additional 4 m of cross arm width that translates to an additional 4 m of ROW width over |

| # | Subject | Reference | Proposed Condition Details | Manitoba Hydro Response |
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| | | | cent?" | that of the existing M602F 76 m wide ROW.<br><br>Manitoba Hydro can consider reducing ROW between towers for the guyed portion of the MMTP from 100m to 80m. Selective clearing around the guyed towers, up to 100 m, may be required to facilitate installation of guy anchors. However, Manitoba Hydro still requires 100m easements around all the guyed towers for sub surface anchor projection. |
| D.2 | Reduce ROW width | Southern Chiefs' Organization (SCO) Closing Argument, June 5, Transcript Page 3796 | "... to reduce the right-of-way to 80 metres from 100 metres" | |
| | | Dakota Plains Wahpeton Oyate (DPWO) Written Closing Argument | "Hydro has numerous existing RoW's of significantly less width than this proposed 80/100 m. solution. If safety is the concern, why does Hydro leave those obviously un-safe ROW's at their existing width?"<br><br>"This transmission line connects to The Great Northern ROW that is 30% narrower than Hydro claims to need. This scar across southern Manitoba can be reduced. The CEC should require that." | |
| E | TOWER DESIGN | | | |
| E.1 | Self-Supporting towers in agricultural | Southeast | "So it strikes me that | Type of tower used on |

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| | and residential areas | Stakeholders' Coalition (SSC), May 15, Transcript Page 1038 | one potential licensing condition that could be placed on a class 3 licence would be the requirement that self-supporting towers must be used near residences and in agricultural areas." | transmission lines is driven by a variety of factors; including land use, clearances and geology. As such, meeting a requirement for mandatory tower type use in residential or agricultural areas may not be possible. It would be cost prohibitive or technically infeasible to accommodate clearances and certain geological features found on agricultural lands and many wetlands exist in agricultural lands. |
| | | Southeast Stakeholders' Coalition (SSC) Written Closing Argument | "Requirement to use self-supporting towers in agricultural and residential areas unless requested by affected landowner(s)." | |
| F | CLEARING | | | |
| F.1 | Alteration or restrictions to ROW clearing | Dakota Plains Wahpeton Oyate (DPWO), May 15, Transcript Page 1101-1102 | "In brief summary, the Bipole licence had three -- by my count, three clauses which affected or reduced the severity of the right-of-way clearing. And my client, and in our discussions, we believe that there is a | Many of the Bipole III licence conditions were to address specific issues associated with the Bipole III Project, such as specific species and potential effects related to access. As such, to mimic these conditions in |

| # | Subject | Reference | Proposed Condition Details | Manitoba Hydro Response |
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| | | | lot yet that can be done to reduce the scar on Mother Earth."<br><br>"Clause 16 of the Bipole licence indicated that you were to use terrain features and vegetation composition to limit access to and line of sight along the development right-of-way. Did implementing that clause or condition prove problematic or costly to Manitoba Hydro? Or is that something that could comfortably be carried forward to the MMT right-of-way clearing conditions?" | the MMTP licence would not make sense as the issues are different. MMTP is proposed in an area with extensive access and includes different species of concern (ex. no caribou in the MMTP Project area). |
| G | BIOMASS, BURNING & GREENHOUSE GAS (GHG) | | | |
| G.1 | Prohibit slash burning | Dakota Plains Wahpeton Oyate (DPWO), May 18, Transcript Page 2019 | "Burning of slash or debris will be specifically prohibited. Burning debris releases stored carbon as CH4, and also | Right-of-way clearing is a necessary part of constructing transmission lines through forested areas. The preferred |

| # | Subject | Reference | Proposed Condition Details | Manitoba Hydro Response |
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| | | | releases N2O, both of which 20 are more powerful GHGs than CO2." | means of dealing with cleared timber and woody debris is to make it available for use as merchantable timber either through the selling of the wood to a local timber company or provide wood to local communities or a combination of the two. When salvage for use is not feasible due to logistic, economic or regulatory constraints, the next-preferred option for dealing with cleared timber and woody debris is in-situ disposal by chipping or mulching. Burning is the least favoured disposal option because of air quality concerns and is only considered when other means of dealing with cleared materials cannot be feasibly employed. |
| | | Dakota Plains Wahpeton Oyate (DPWO), May 17, Transcript Page 1645 | "Would you agree with me that if it was a condition of this licence that instead of burning slash, Manitoba Hydro made every effort to use the biomass productively and to mulch the remainder, that the risk to localized air quality would be reduced?" | |
| G.2 | No slash burning or none at night | Dakota Plains Wahpeton Oyate (DPWO), May 15, Transcript Pages 1091 | "The Province of Manitoba says that it is not safe to burn after sunset because smoke tends to linger close to the ground where it can cause health and safety concerns. Would Manitoba Hydro respect that concern and not burn at night, should you choose to burn?" | |

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| G.3 | Minimizing impact of smoke from slash burning on places where people gather | Southeast Stakeholders' Coalition (SSC), May 23, Transcript Page 2266 | "And would there be any operational problems if that licensing condition from Bipole III that relates just to minimizing the impact of smoke on residences is expanded beyond residences to other places where people might gather?" | Manitoba Hydro, as part of its construction practices, considers the surrounding area and conditions prior to engaging in slash burning. Challenges with prohibiting burning of slash where people might gather would be difficult without a clear definition of "where people gather". |
| G.4 | Burning restrictions | Southeast Stakeholders' Coalition (SSC) Written Closing Argument | "Expanding restrictions on slash burning near communities and places frequented by people that go beyond the minimal restrictions contained in Condition 44 of the Bipole III License" | |
| G.5 | Biomass for heating | Dakota Plains Wahpeton Oyate (DPWO), June 1, Transcript Page 3562 | "We observed that the Pinelands Nursery and the Providence College, both within the, almost within the footprint of Manitoba-Minnesota, both rely on biomass for heating sources. And we think that with some | Right-of-way clearing is a necessary part of constructing transmission lines through forested areas. The preferred means of dealing with cleared timber and woody debris is to make it available for use as |

| # | Subject | Reference | Proposed Condition Details | Manitoba Hydro Response |
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| | | | continued contribution of Hydro, that the biomass can be, that a healthy use of it can be arrived at." | merchantable timber either through the selling of the wood to a local timber company or provide wood to local communities or a combination of the two. When salvage for use is not feasible due to logistic, economic or regulatory constraints, the next-preferred option for dealing with cleared timber and woody debris is in-situ disposal by chipping or mulching. Burning is the least favoured disposal option because of air quality concerns and is only considered when other means of dealing with cleared materials cannot be feasibly employed. |
| G.6 | Biomass | Dakota Plains Wahpeton Oyate (DPWO) Written Closing Argument | "The CEC needs to ensure that Hydro dispose of the biomass in the most environmentally friendly manner. This could include delivery to biomass consumers, mulching, firewood distribution and commercial use. A "zero burn" condition can be easily and responsibly met." | |
| G.7 | GHG reduction methods | Dakota Plains Wahpeton Oyate (DPWO) Written Closing Argument | "No idling, GHG contribution alternatives considered, no burning and all contemporary methods of GHG reduction should be the next step in Hydro's position of continually improving their game." | |

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| G.8 | GHG and fuel consumption monitoring | Dakota Plains Wahpeton Oyate (DPWO) Written Closing Argument | "The CEC needs to require a post event report confirming, or not, the quantities presented, for the Minister's review... Fuel consumption reports are the greatest concern and contractors can simply be required to provide that information. If monitored monthly, as in other jurisdictions, Hydro could manage, and if required, mitigate, to ensure their assurances are achieved." | On-site fuel combustion by contractors during construction are estimated to contribute to only 2% of project related GHG emissions and are therefore not a significant concern or source of uncertainty. Data collection and report compilation would add to project costs with negligible benefit. |
| H | EMF & STRAY VOLTAGE | | | |
| H.1 | Pre- and post-construction EMF monitoring | Southeast Stakeholders' Coalition (SSC) Written Closing Argument | "Pre-construction measuring and post-construction monitoring of EMFs upon request by residents within certain vicinity of the right of way" | As Dr. Bailey testified, the Manitoba-Minnesota Transmission Project is, "a very long transmission line. One could not reasonably measure the magnetic field just by itself. Electric fields are complicated by |
| H.2 | Pre-construction EMF measurement | Dakota Plains Wahpeton Oyate | "The CEC should require an EMF pre- | |

| # | Subject | Reference | Proposed Condition Details | Manitoba Hydro Response |
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| | | (DPWO) Written Closing Argument | construction measured baseline and then a post construction comparison of fully loaded lines... Should there be issues found, imbed language that requires Hydro to mitigate or compensate to the levels of assurance we have received." | vegetation and surrounding objects, and so those levels vary all over the place; but even magnetic fields, it may not even be possible at some locations to get to that location, reasonably, to take a measurement."<br><br>As further noted by Dr. Bailey, "a pre-measurement may or may not be at all helpful, because that pre-measurement may not have been taken at a location which was close to where the complaint arose, and so therefore would not be helpful; or that there might be site-specific conditions that might make the area where a concern or complaint originated to be different from what a standard pre- |

| # | Subject | Reference | Proposed Condition Details | Manitoba Hydro Response |
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| | | | | construction survey might mean. So... it wouldn't be something that would be particularly informative in terms of addressing a complaint of a particular landowner." |
| H.3 | Ongoing reporting to landowners directly on EMF studies | Southeast Stakeholders' Coalition (SSC), May 17, Transcript Page 1724 | "...there would be no technical or financial impediment to Manitoba Hydro complying with a licence condition that would require information about the ongoing monitoring of the EMF studies being directly provided to landowners along or near the right-of-way?" | As Dr. Bailey testified, "I think what you describe [to catalogue independent third-party pre and post EMF measurements catalogued] is extremely complicated, and not likely to be useful in resolving particular customer complaints. So this is a very long transmission line. One could not reasonably measure the magnetic field just by itself. Electric fields are complicated by vegetation and surrounding objects, and so those levels vary all over the place; but even |

| # | Subject | Reference | Proposed Condition Details | Manitoba Hydro Response |
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| | | | | magnetic fields, it may not even be possible at some locations to get to that location, reasonably, to take a measurement." |
| H.4 | Resolution of EMF-related complaints | Southeast Stakeholders' Coalition (SSC) Written Closing Argument | "Mandatory resolution of EMF-related complaints about interference with radio, tv, wifi and so on (similar to Article 8 of the GNTP Presidential Permit)" | When a landowner expresses a concern with radio interference or television interference, Manitoba Hydro will have discussions with the landowners about addressing those concerns. |
| I | HERBICIDES | | | |
| I.1 | Herbicide notification to FN and Metis | Dakota Plains Wahpeton Oyate (DPWO), May 17, Transcript Page 1641 | "Then the question was, or the statement was made by Dr. Leece, Manitoba Hydro will advise indigenous and Metis prior to herbicide use." | Manitoba Hydro is required to advertise prior to herbicide application as per the Pesticide Use Permit pursuant to the Pesticides and Fertilizers |

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| I.2 | Herbicide notification to FNs and prohibition of herbicide application in areas of FN and Metis harvesting | Southern Chiefs' Organization (SCO), May 17, Transcript Page 1667 | "...I want acknowledgment Manitoba Hydro has made a commitment they are going to work with and notify First Nations, and if there is any harvesting they are not going to be applying any herbicides there, but what happens if pretty much the whole 30 per cent going through Crown lands, First Nations say that's where we're harvesting, don't spray any herbicides?" | |
| I.3 | Restricting herbicide use | Southern Chiefs' Organization (SCO) Closing Argument, June 5, Transcript Page 3797 | "But it was revealed that Manitoba Hydro has committed to ultimately not spraying herbicides on private lands if the owner of the property ultimately objects to its use, but they would not make the same commitment for Crown lands." | Manitoba Hydro received sensitive site information through the First Nations and Metis Engagement Process and its public engagement process, and Manitoba Hydro will incorporate those sites into our integrated vegetation management plan, so that there is no |

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| | | | | herbicide spraying on these sites.<br><br>If, through general notices or other mechanisms, residents of Manitoba identify their concern or opposition to spraying in specific areas, Manitoba Hydro will discuss all the different options that are available to get to the nature of the concern and take appropriate action. |
| I.4 | Pesticide/herbicide health study | Southern Chief's Organization (SCO) Closing Argument, June 5, Transcript Pages 3787 & 3802 | "SCO also submits that a proper health assessment, that includes a detailed study of the active ingredients in the herbicides, needs to be performed before any licensing decisions are made."<br><br>"...a further health assessment of herbicide use should include the | Herbicides use is strictly regulated by Health Canada and the Province. The health effects of any herbicides are extensively studied by Health Canada prior to authorizing its use. |

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| | | | active ingredients of the herbicides being used, and this should also include a licence condition that if the active ingredients are changed at some future point, at some time in the future, that there would also need to be a similar assessment of the potential health impact of those herbicides." | |
| J | AESTHETICS | | | |
| J.1 | Aesthetics of ROW | Dakota Plains Wahpeton Oyate (DPWO) Written Closing Argument | "The CEC must imbed firm instructions in this regard" [with respect to Quality and Aesthetics of The Right of Way]. | As per transcript page 604, Manitoba Hydro is committed to working with landowners with regards to tower spotting in relation to residences and fields of view.<br><br>Further, as per transcript page 1483, compensation will be available for re-establishing shelter belts outside of the right-of- |

| # | Subject | Reference | Proposed Condition Details | Manitoba Hydro Response |
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| | | | | way where possible (visual screening). |
| K | ICE BRIDGES | | | |
| K.1 | Ice bridges | Dakota Plains Wahpeton Oyate (DPWO) Written Closing Argument | "The CEC should include language that reduces their [ice bridge] use and ensures their first removal." | As per transcript page 1996, existing access is much preferred over any temporary or any access that Manitoba Hydro needs to create itself. |
| L | MONITORING PLAN | | | |
| L.1 | Modify monitoring plan | Consumers Association of Canada (CAC) Closing Argument Presentation, June 5 | "Manitoba Hydro modify its objectives of the monitoring plan to add a reference to adaptive management and remove the reference to baseline information." | Manitoba Hydro can adjust its Environmental Monitoring plan to reflect these concerns. |
| L.2 | Standardize monitoring plan | Consumers Association of Canada (CAC) Closing Argument Presentation, June 5 | "Manitoba Hydro commit to developing a more standardized monitoring format across projects." | Manitoba Hydro has a standardized monitoring report format across all its Transmission projects. |
| L.3 | Monitor fish and traditional plants | Consumers Association of Canada (CAC), June 5, Transcript Page 3770 | "Manitoba Hydro should create monitoring plans for three endangered fish species which are found in the ROW, | As noted by Mr. Block in his testimony and by Mr. Bedford in his final argument, the closest that any permanent |

| # | Subject | Reference | Proposed Condition Details | Manitoba Hydro Response |
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| | | | which include bigmouth buffalo, mapleleaf mussels, and lake sturgeon."<br><br>"Manitoba Hydro should also be creating a monitoring plan for the medicinal and traditional plants." | infrastructure will be to any water body along the project route is 42 metres from the ordinary high-water mark of the River. Mitigation measures in the environmental protection plan will be applied to the 29 watercourses that were direct fish habitat crossings.<br><br>In regards to medicinal and traditional plants, Manitoba Hydro will work with information provided through the First Nation and Metis Engagement Process (FNMEP) and will work with the Indigenous Monitoring Working Group. |
| L.4 | Independent, Transparent Monitoring | Peguis First Nation (PFN), June 5, Transcript Page 3853-3855 | "I'm suggesting a recommendation of joint participation in setting up the monitoring program, and joint | Manitoba Hydro considers the involvement of First Nations and Metis in the monitoring program to |

| # | Subject | Reference | Proposed Condition Details | Manitoba Hydro Response |
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| | | | participation in selecting monitoring"<br><br>"...I heard from Manitoba Hydro was they were planning to monitor for like, you know, one or two years, two years for some things, one year for other things. And I had a problem with that in cross-examination." | be essential for the project and will continue its work to develop mechanisms for involvement such as the Indigenous Monitoring Working Group. It is anticipated that the monitoring program will be further adapted and improved with ongoing First Nations and Metis engagement.<br><br>Participants in the hearing have noted a concern regarding the duration of the monitoring program. As noted in Part I (add section where discussed and by both Mr. Matthewson and Mr. Wiens, the duration of the monitoring program will remain flexible based on the programs findings and results of several |

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| | | | | other transmission projects currently under construction such as Bipole III. The monitoring program has undergone scientific review of schedule, methods and valued components by both provincial and federal discipline experts and will be updated to include any conditions arising out of further provincial and federal regulatory review processes. |
| | | Manitoba Wildlands (MWL) Closing Argument, June 5, Transcript Page 3874 | "...make sure that monitoring is active, transparent, independent..." | Manitoba Hydro is committed to publishing publically available annual monitoring reports. |
| M | INDIGENOUS MONITORING WORKING GROUP | | | |
| M.1 | Indigenous Monitoring Working Group | Consumers Association of Canada (CAC) Closing Argument, June 5, Transcript Page 3770 | "Manitoba Hydro should create, in collaboration with indigenous nations and organizations, an indigenous community monitoring committee." | Manitoba Hydro is committed to working with communities to form an Indigenous Monitoring Working Group. |
| N | DECOMMISSIONING | | | |

| # | Subject | Reference | Proposed Condition Details | Manitoba Hydro Response |
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| N.1 | Public process for decommissioning | Southern Chiefs' Organization (SCO), May 16, Transcript Page 1332 | "...would Manitoba Hydro be willing to consider a licensing condition which mandated some sort of public process when decommissioning was to take place, be it 100 years from now, be it 200 years from now?" | Projects like this transmission line are anticipated to have a very long life span. Manitoba Hydro believes decommissioning of the project is best done under the regulatory regime at the time of decommissioning, |
| O | AUDIT | | | |
| O.1 | Third party post-construction audit as per BPIII clause | Dakota Plains Wahpeton Oyate (DPWO), May 15, Transcript Page 1107 | "...I am asking you if clause 63 of the Bipole III was applied to the Manitoba-Minnesota Transmission Project -- in other words, if this board recommended, again, a third-party upon-completion audit, would you mind if that condition, this time, indicated that that report was to be made available to the public as well as the Director?" | If directed Manitoba Hydro will share the results of third party audits, however confidential and contractor information would have to be redacted if it were to be shared with public. An audit summary could be shared with the public. |
| O.2 | Third party audits | Clean Environment | "In the last two CEC | Cost [of a third-party |

| # | Subject | Reference | Proposed Condition Details | Manitoba Hydro Response |
|---|---|---|---|---|
| | | Commission (CEC), June 1, Transcript Page 3669 | reports, on Bipole III and Keeyask, the Commission made recommendations on implementing third-party audits on those respective projects to assess the accuracy of assumptions and predictions. Other than concerns with regard to cost, does Manitoba Hydro have any concerns with respect to the undertaking of such audits?" | audit] is certainly a concern for Manitoba Hydro, The MMTP Project will undergo extensive oversight by both Provincial and Federal regulators, including the requirements of monitoring reports to demonstrate the effectiveness of the mitigation measures, the accuracy of the assumptions and predictions, and accuracy of assumptions and predictions, and that use of adaptive management.<br><br>As noted in Mr. Bedford's closing argument, "I reiterate Mr. Matthewson's suggestion that such an audit for this project be discretionary in the Minister's judgment. Let us wait and |

| # | Subject | Reference | Proposed Condition Details | Manitoba Hydro Response |
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| | | | | receive the audit that is part of the licence conditions for Bipole III, that was to be done five years into the project. And when we see that audit, we can weigh its value." |
| P | POST-LICENCE MODIFICATIONS & COMMUNICATION | | | |
| P.1 | Notification of violation of licence condition | Southeast Stakeholders' Coalition (SSC) Written Closing Argument | "Mandatory notification to residents and provincial government of any violations of licensing conditions" | The National Energy Board posts all applications to modify international power line on their public registry. And in terms of direct notification to third parties, Manitoba Hydro will provide such notification where directed to by the National Energy Board, or required under the National Energy Board Act. Manitoba Hydro also provides these notifications about route modifications, as an example, on to the |
| P.2 | Communication | Dakota Plains Wahpeton Oyate (DPWO) Written Closing Argument | "The Director and Hydro must be required to include all affected, BEFORE the change is approved."<br><br>"All "adjustments", changes, modifications or additional information must be reviewed by affected First Nations as part of, and within, the process. Posting on a hard to find web page, | |

| # | Subject | Reference | Proposed Condition Details | Manitoba Hydro Response |
|---|---|---|---|---|
| | | | after the fact, is just not acceptable." | provincial public registry, so that all can see. The purpose of Manitoba Sustainable Development's public registry is for everybody to have the same information. |
| | | Peguis First Nation (PFN) Closing Argument, June 5, Transcript Page 3848 | "If an MMTP licence is issued, then that licence must be public, and changes to that licence have to be made in public with review process, with negotiation, with transparency." | |
| P.3 | Authority for change | Dakota Plains Wahpeton Oyate (DPWO) Written Closing Argument | "The CEC needs to recommend the mechanism to ensure that the oversight provided in this current review process does not evaporate as the Work starts."<br><br>"Strong language establishing low thresholds for public and Stakeholder contribution needs to be applied." | |

# Appendix C: Public concerns raised during the hearing

# Appendix C – Clean Environment Commission events in La Broquerie

The following outlines the date and transcript location of concerns raised by members of the public during the May 25 and 27 public sessions and submissions. Manitoba Hydro's response to these concerns is noted.

| Concern raised | Date | Transcript location | Response |
|---|---|---|---|
| **Notification was not received during Round 1.** | May 25, 2017 | Page 2665<br>Lines 12-23 | As outlined in "Section 3.4.3 Notification" of the EIS, Manitoba Hydro used numerous notification methods to cast the net wide early in the process. Local and regional newspapers (Winnipeg Free Press and Dawson Trail Dispatch) were utilized as one means of notification. Direct letters were sent to over 7,900 residences, over 25,000 postcards sent to each postal code in the route selection area, posters were placed in frequently visited locations in communities near the proposed options. |
| **Trespassing and access of ATVs. No installation of fencing or signage.** | May 25, 2017 | Page 2667<br>Lines 8-22<br><br>Page 2669<br>Line 14<br><br>Page 2701<br>Line 15-16 | As outlined in Table 3-4 of the EIS<br>*"Manitoba Hydro will work with local authorities to manage access along the ROW once a final route has been approved and will work with landowners who wish to implement measures to limit access to the ROW. To limit the potential increase in access existing trails, roads and cut lines will be used as access routes whenever possible."* |
| **Property value decrease** | May 25, 2017 | Page 2668<br>Lines 1-3 | As outlined in Table 3-4 of the EIS<br>*"During the PEP, Manitoba Hydro indicated that current research suggests that there is no appreciable change in property values by the presence of a transmission line. Manitoba Hydro continues to monitor property values around other transmission projects."* |
| **Utilization of unoccupied Crown land** | May 25, 2017 | Page 2668<br>Lines 9-11 | As outlined in Table 3-4 of the EIS<br>*"Crown land is considered when determining a Final Preferred Route for the Project. Crown land is not a default routing option and the transmission line* |

| Concern raised | Date | Transcript location | Response |
|---|---|---|---|
| | | Nettie Weiss | *routing process aims to balance various perspectives on the landscape."* |
| **Use of herbicides and effect to ground water resources** | May 25, 2017<br><br>May 27, 2017 | Page 2670<br>Lines 6-9<br><br>Page 2755<br>Lines 20-24 | Please refer to the response provided by Mr. Matthewson on page 3643 Line 25 to 3645 to Line 5. |
| **Removal of shelterbelts** | May 25, 2017 | Page 2678<br>Lines 19-23<br><br>Page 2683<br>Line 1-10 | As outlined in section 16.5.6.2, "Mitigation for Change in Forested Areas"<br><br>*- "Locations of tree improvement sites, private managed woodlots and shelterbelts will be identified in the Construction Environmental Protection Plan (CEnvPP) for the line to limit damage from construction activities (e.g., errant construction equipment).*<br><br>*-Farmsteads and rural residences with shelterbelts established for aesthetic and environmental values affected by Project activities will be compensated by Manitoba Hydro*<br><br>*-Manitoba Hydro will re-establish shelterbelts outside of the ROW where possible in such areas affected."* |
| **Stray voltage concerns** | May 25, 2017 | Page 2676<br>Lines 20-25<br><br>Page 2684<br>Lines 12-25<br><br>Pages 2718-2719 | Please refer to the response provided by Mr. Swatek at Page 3655 Line 13 to Page 3658 Line 2.<br>*"Yes, the problem of stray voltage is not related to transmission lines; it is not a problem related to EMF. The problem of stray voltage is -- well, stray voltage is caused by -- it is caused by unbalanced loads in facilities... So the problem of stray voltage is completely related to load balance and grounding; it is not related to electric and magnetic fields. The current that's in this 500 kV line is a perfectly balanced three-phase current that is not connected to the ground in any way."* |
| **Increased application and nuisance around** | May 25, 2017 | Page 2680<br>Line 22-25 | As outlined by the Landowner Compensation Policy Handout (available on the Manitoba Hydro project website and filed with the Round 3 Technical Data Report): |

| Concern raised | Date | Transcript location | Response |
|---|---|---|---|
| **tower structures** | | | *"Structure impact compensation is a one-time payment to landowners for each transmission tower placed on land classed as agricultural. Structure impact compensation covers:*<br>• *Crop losses on lands permanently removed from production;*<br>• *Reduced productivity in an area of overlap around each tower structure;*<br>• *Additional time required to manoeuvre farm machinery around each structure;*<br>• *Double application of seed, fertilizer and weed control in the area of overlap around each tower structure."* |
| **Biosecurity and spread of disease** | May 25, 2017<br><br>May 27, 2017 | Page 2682 Line 1-25<br><br>Page 2812 Lines 10-18 | As outlined in Chapter 3, Table 3-4 of the EIS<br><br>*"Manitoba Hydro has an existing Agricultural Biosecurity Policy that addresses the need for standard operating procedures that assess potential biosecurity risks, considers factors such as soil conditions and time of year, and prescribes actions to manage potential risks. Manitoba Hydro employees and contractors working on private agricultural land are trained and aware of these procedures. The Policy indicates that if the affected livestock operator is under a provincial mandate or emergency biosecurity measures, Manitoba Hydro will abide by their protocols. The Policy indicates that provincially mandated or emergency biosecurity measures will supersede Manitoba Hydro procedures."* |
| **Bird strikes with overhead lines** | May 25, 2017 | Page 2683 Lines 11-17 | As outlined in Table 3-4 of the EIS<br><br>*"The environmental assessment processes identifies potential sensitivities. Manitoba Hydro will identify sensitive sites and will consider mitigation such as bird diverters or construction scheduling to lessen potential effects."* |
| **Ability to parallel M602F** | May 25, 2017 | Page 2692 Lines 18-22 | As outlined in Section 3.7.2.1.3 of the EIS<br><br>"***Segments 122 and 123***<br>*Participants believed that, MMTP should parallel the existing 230kV or 500kV transmission line that is located in the area. Participants preferred infrastructure to be placed together to lessen effects on private property, areas with higher* |

| Concern raised | Date | Transcript location | Response |
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| | | | *populations and landscape viewsheds. These segments were added to ensure that parallel options were evaluated."* These were evaluated and considered based on public feedback. |
| **Right of way for M602F is only 50m and why do we require 80m for MMTP** | May 25, 2017 | Page 2695 Lines 2-4 | The right-of-way for M602F is 76m wide, not 50m. The additional 4m (for the right-of-way associated with self-supporting towers) will allow for safe live wire maintenance on the transmission line as outlined by Mr. Swatek on Page 233Lines 13-20 *"The distance between the conductors, that's determined by electrical clearances within the tower. They are as tight as they can be while still allowing safe live line work to be carried out. And the height of the conductors is -- is to meet -- is to meet standards at ground level for induced currents on vehicles, which is a result of electric fields."* |
| **Fencing will not be worked out with each landowner and the cost is theirs** | May 25, 2017 | Page 2702 Lines 3-5 | As outlined in materials provided by Manitoba Hydro to the public during the PEP (June 2014 Q&A): *"The landowner can work with Manitoba Hydro to implement measures to limit access to or on the right-of-way. Fencing (with gate) and signage, supplied and installed by Manitoba Hydro, are the most common forms of restricting access to the right-of-way on private property."* |
| **Milk production and quality will suffer** | May 25, 2017 | Page 2720 Lines 21-25 | As outlined in the presentation provided by Dr. Bailey Page 2789 Line 19 to Page 2790 Line 18 *"Scientists have also been interested about whether fields might have an effect on livestock or plants or wildlife. Obviously, some of these might spend considerable amount of time underneath the power lines. So we have certain kinds -- here is the kinds of studies that have been done. We have studies of farm -- of cattle living near high-voltage transmission lines. We have experimental studies in which groups of animals have been placed directly underneath a power line and then compared to a group of animals selected from the same herd that have been placed 2,000 metres away. Those studies have been done for cattle, sheep, and swine. In Quebec, we have a very extensive series of studies in which cattle were exposed to magnetic fields characteristic of 735 kV transmission lines. There have been studies looking at corn and soybeans in fields near transmission lines. Experimental studies of* |

| Concern raised | Date | Transcript location | Response |
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| | | | *more than 70 plant species that have been grown in a laboratory and exposed to electromagnetic fields. And overall, there is no effect of these high-voltage transmission lines, or of similar EMF exposures in the laboratory."* |
| **Mapping is not representative of what is on the ground (homes are missing)** | May 27, 2017 | Page 2741<br>Lines 10-18<br><br>-<br>- Kitty Kannellis<br>- Monique & Albert Bedard<br>- Anni Markmann | Please see the response provided by Mr. Matthewson to Ms. Streich at Page 3658 Line 4 to Page 3660 Line 5.<br>*"Manitoba Hydro is very aware of the rapid changes in the landscape, such as new building construction, which is why we conducted numerous windshield surveys and aerial surveys, and reviewed other aerial imagery sources, such as Bing and Google Maps, as they were newer versions, in each round, to update its various geospatial layers, especially the buildings layer, prior to route evaluation."* |
| **EMFs will cause negative health effects** | May 27, 2017 | Page 2743<br>Lines 16-20<br><br>Written submissions | As outlined in the presentation given by Dr. Bailey at Page 2798Line 1 to Line 17:<br>*"And here are the conclusions from the environmental impact statement. Again, the MMTP line will increase these levels on the right-of-way, but result in only a small change in these parameters at the edge of the right-of-way and beyond. And all of these calculated values will comply with standards and guidelines. And the current consensus among numerous national and international scientific agencies that have reviewed this body of research is there are no known adverse health consequences of exposure to ELF, EMF, at levels generally found in residential and occupational environments, including proximity to electric transmission line and distribution facilities, and results from research do not provide evidence to alter this conclusion".* |
| **Organic garden grown/Use of herbicides** | May 27, 2017 | Page 2746<br>Lines 8-11 | Please refer to the response provided by Mr. Matthewson on page 3643 Line 25 to 3645 to Line 5.<br>*"Manitoba Hydro would first discuss the concern with residents to understand the nature of the concern. It would share information about its specific integrated veg management plans for the area, including the objectives, the mitigation measures that it puts into place, the treatment method options,* |

| Concern raised | Date | Transcript location | Response |
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| | | | *chemical and mechanical, and the applicability of those options on that particular site, and the potential environmental effects of all the different options."* |
| **Noise will interfere with enjoyment of the property** | May 27, 2017 | Page 2800<br>Lines 18-23 | As outlined in Table 3-4 of the EIS<br>*"Line noise is typically perceived in close proximity to the conductors. Manitoba Hydro has undertaken modelling to provide an estimate of decibel levels anticipated as part of this Project."*<br>As outlined in Dr. Bailey's presentation on slide 54, and Page 2794 Line 18 to Page 2795 Line 2. .<br>*" Looking at audible noise. Again, the levels of audible noise are very low. This is, let's say, about 25dBA; that's what you would expect in a very quiet room, and it gets weaker and weaker with distance. The quiet rural background levels are higher, so under these circumstances, it is doubtful under most circumstances, unless you were right on the right-of-way, listening for it, you wouldn't be able to hear the line."* |
| **Wasting valuable agricultural lands** | May 27, 2017 | Page 2806<br>Lines 15-19 | As outlined in Table 3-4 of the EIS<br>"*While routing considers the value of these lands based on crop production and soil classification, avoidance is not always possible. To reduce the potential effects when routing on agricultural lands, the preference is to align the route on the half-mile line or parallel to other linear features. Self-supporting towers with a smaller footprint are used in agricultural areas to limit potential effects on agricultural operations."* |
| **Am I liable for tower damages if a tower is located on my property?** | Glennis McGregor | Written submission | Manitoba Hydro position regarding liability.<br>Damages to a tower would not default to the property owner solely on account of the presence of the tower on your property. You are only liable if you caused the damage. The damage would first be investigated to determine fault and to estimate replacement/repair costs. Fault would be borne by the individual/entity that caused the damage and will be considered on a case-by-case basis. If you did not damage the tower you are not liable for damage to towers on your property. If you accidentally damage a tower and you have liability insurance, the damage could be covered by your insurance company subject to terms and conditions of your policy. |