Appendix D: Summary of engagement with Provincial and Federal Authorities and non-government expert bodies

Appendix D Part 1: Summary of Consultation to Date with Provincial and Federal authorities

Manitoba Hydro consulted with provincial and federal authorities regarding the plan.

Contact and Title	Agency	Emailed	Called	Response Received	Response Provided
Elise Dagdick, Environment Officer	Environmental Approvals Branch, Manitoba Conservation and Climate, Province of Manitoba	November 28, 2019	N/A	April 8, 2020	July 24th, 2020
Mr. Paul Gregoire, A/Manager	Regulatory Affairs Section, Canadian Wildlife Service, Environment and Climate Change Canada, Government of Canada	November 27, 2019	N/A	December 2, 2019	None required
Sebastien Labelle, Director General	Major Projects Management, Natural Resources Canada, Government of Canada	November 29, 2019	N/A	January 10, 2020	None required
Carmen Kardoes, Regional Director	Governance and Community Dev Indigenous Services Canada, Government of Canada	November 29, 2019	N/A	January 21, 2020	None required. Final plan will be shared in future.
Diana Watson, Director	Lands and Economic Development, Indigenous Services Canada, Government of Canada				

Summary of issues or concerns provided by with provincial and federal authorities and Manitoba Hydro's response

Issues or Concerns Provided	How Manitoba Hydro Addressed or Responded to Issues or Concerns Raised
Manitoba Conservation and Climate expressed concerns regarding the wetland damage beyond the tower footprints, clarification on the type of wetland classification being used, and consideration of accidental and unforeseen wetland loss.	Manitoba Hydro provided a written response to Manitoba Conservation and Climate. This response addressed concerns regarding wetland loss outside of the tower footprints by outlining existing wetland commitments in the construction environmental protection plans. Clarifications were also provided on the type of wetland system being used. Additional amendments were made on reporting accidental or unforeseen loss of wetlands. Addressing the recommendations from Manitoba Conservation and Climate only required minor alterations to the Wetland Offset Measures Plan and No Net Loss of Wetlands Plan.
Environment and Climate Change Canada indicated that they had not identified any concerns.	No response was required.
Natural Resources Canada did not indicate any concerns with the plan but encouraged Manitoba Hydro to consider the views raised by Indigenous communities as part of the engagement process.	No response was required.
Indigenous Services Canada did not indicate concerns with the Plan but recommended that the following federal departments should receive the documents, Impact Assessment Agency (former CEAA for federal coordination), Transport Canada (nav. waters) Department of Fisheries and Ocean (stream crossing impact on Fish) and Environment and Climatic Change Canada (species at risk).	No response was required. Manitoba Hydro will provide a final copy of the Plan to each of these federal agencies.

Initial correspondence submitted to provincial and federal authorities:

Manitoba Hydro

5-360 Portage Avenue • Winnipeg, Manitoba Canada • R3C 0G8
(204) 360-3119 • jmatthewson@hydro.mb.ca

November 28, 2019

Client File No. 5750.00
Licence No. 3288

Ms. Elise Dagdick
Environmental Approvals
Manitoba Sustainable Development
1007 Century Street
Winnipeg, MB R3H 0W4

Dear Ms. Dagdick:

RE: Manitoba-Minnesota Transmission Project– Wetland Offset Measures Plan

Pursuant to Manitoba-Minnesota Transmission Project National Energy Board Certificate of Public Convenience and Necessity EC-059 condition 26 and *Environment Act* licence #3288 condition 36, Manitoba Hydro is seeking your feedback on the attached Wetland Offset Measures Plan.

This document outlines Manitoba Hydro's plan for offsets for unavoidable permanent wetland losses with the goal of no net loss of wetlands as a result of the project. This Plan follows the requirements dictated under the Province of Manitoba's *The Water Rights Act* and Water Rights Regulation. Manitoba Hydro will also be seeking input from federal authorities and impacted Indigenous communities.

Please provide any feedback on this plan by January 17, 2020.

For your reference, federal certificate condition 26 and provincial licence condition 36 state:

26. Wetland Offset Measures Plan
Manitoba Hydro must file with the Board for approval, ***within ninety (90) days of commencing operation of the Project****, a Wetland Offset Measures Plan which outlines how permanent loss to wetlands resulting from the Project will be offset or compensated for. This plan must include:*

a) a description of site-specific details and maps showing the locations of permanent wetland loss as a result of Project activities at Dorsey Converter Station and the transmission tower locations, as well as any other locations where wetlands were affected by the Project;

b) an explanation of how wetland function will be measured during the post-construction monitoring program, and any resulting accidental permanent loss to wetlands quantified and reported to the Board as part of Condition 23;

c) a list of the offset or compensation measures that will be implemented to address permanent loss of wetlands as identified in a) and b) above;

d) an explanation of the expected effectiveness of each offset measure described in c) and the relative value of each offset measure towards achieving the offset;
e) the decision-making criteria for selecting specific offset measures and offset ratios that would be used under what circumstances;
f) a schedule indicating when measures will be implemented and estimated completion date(s);
g) evidence and summary of consultation with provincial and federal authorities, any non-governmental expert bodies, and any impacted Indigenous communities regarding the plan; and,
h) this summary must include a description of any issues or concerns raised regarding the plan by Indigenous communities, and how Manitoba Hydro has addressed or responded to them.

Wetlands
36. The Licencee shall, within three months of the completion of construction of the Development, submit a plan for approval of the Director of the Environmental Approvals Branch to ensure that there is no net loss of wetland benefits related to Class 3, 4, and 5 wetlands (as defined by the Stewart & Kantrud Classification System) that are altered or destroyed during construction of the Development.

Should you have any questions or wish to discuss, please do not hesitate to contact me at 204-360-3119.

Regards,

Original signed by

James Matthewson
Licensing and Environmental Assessment Department
Manitoba Hydro
360 Portage Ave (5)
Winnipeg, Manitoba
R3C 0G8

Attachment: 1

Manitoba Hydro
5-360 Portage Avenue • Winnipeg, Manitoba Canada • R3C 0G8
(204) 360-3119 • jmatthewson@hydro.mb.ca

November 27, 2019

Mr. Paul Gregoire
Environment and Climate Change Canada
9250 49 Street NW
Edmonton, AB
T6B 1K5

Dear Mr. Gregoire:

RE: Manitoba-Minnesota Transmission Project– Wetland Offset Measures Plan

Pursuant to Manitoba-Minnesota Transmission Project National Energy Board Certificate of Public Convenience and Necessity EC-059 condition 26, Manitoba Hydro is seeking feedback from your agency on the attached draft Wetland Offset Measures Plan.

The Plan can be accessed electronically at this link:
https://www.hydro.mb.ca/projects/mb_mn_transmission/pdfs/wetland_offset_measures_plan_draft.pdf

This document outlines Manitoba Hydro's plan for offsets for permanent wetland losses with the goal of no net loss of wetlands as a result of the project. This Plan follows the requirements dictated under the Province of Manitoba's *The Water Rights Act* and Water Rights Regulation. Manitoba Hydro is seeking input from provincial and federal authorities, non-government expert bodies and impacted Indigenous communities.

Please provide any feedback on this plan by January 17th, 2020.

For your reference, federal certificate condition 26 and provincial licence condition 36 state:

26. Wetland Offset Measures Plan
Manitoba Hydro must file with the Board for approval, ***within ninety (90) days of commencing operation of the Project****, a Wetland Offset Measures Plan which outlines how permanent loss to wetlands resulting from the Project will be offset or compensated for. This plan must include:*

> *a) a description of site-specific details and maps showing the locations of permanent wetland loss as a result of Project activities at Dorsey Converter Station and the transmission tower locations, as well as any other locations where wetlands were affected by the Project;*

b) an explanation of how wetland function will be measured during the post-construction monitoring program, and any resulting accidental permanent loss to wetlands quantified and reported to the Board as part of Condition 23;
c) a list of the offset or compensation measures that will be implemented to address permanent loss of wetlands as identified in a) and b) above;
d) an explanation of the expected effectiveness of each offset measure described in c) and the relative value of each offset measure towards achieving the offset;
e) the decision-making criteria for selecting specific offset measures and offset ratios that would be used under what circumstances;
f) a schedule indicating when measures will be implemented and estimated completion date(s);
g) evidence and summary of consultation with provincial and federal authorities, any non-governmental expert bodies, and any impacted Indigenous communities regarding the plan; and,
h) this summary must include a description of any issues or concerns raised regarding the plan by Indigenous communities, and how Manitoba Hydro has addressed or responded to them.

For your reference, the Provincial authorization for the Project under *The Environment Act* (licence #3288) includes condition 36:

Wetlands
36. The Licencee shall, within three months of the completion of construction of the Development, submit a plan for approval of the Director of the Environmental Approvals Branch to ensure that there is no net loss of wetland benefits related to Class 3, 4, and 5 wetlands (as defined by the Stewart & Kantrud Classification System) that are altered or destroyed during construction of the Development.

Should you have any questions or wish to discuss, please do not hesitate to contact me at 204-360-7677 (mbratland@hydro.mb.ca) or Jonathan Wiens at 204-360-6623 (jwiens@hydro.mb.ca). If you will not be reviewing and providing feedback on the document, we ask that you please inform us.

Regards,

Original signed by

Maggie Bratland
Licensing and Environmental Assessment Department
Manitoba Hydro
360 Portage Ave (5)
Winnipeg, Manitoba
R3C 0G8

Attachment: 1

Manitoba Hydro
5-360 Portage Avenue • Winnipeg, Manitoba Canada • R3C 0G8
(204) 360-3016 • scoughlin@hydro.mb.ca

November 29, 2019

Mr. Sebastien Labelle
Director General
Major Projects Management Office
Natural Resources Canada
580 Booth Street
Ottawa, ON K1A 0E4

Dear Mr. Labelle:

RE: Manitoba-Minnesota Transmission Project– Wetland Offset Measures Plan

Pursuant to Manitoba-Minnesota Transmission Project National Energy Board Certificate of Public Convenience and Necessity EC-059 condition 26, Manitoba Hydro is seeking feedback from your agency on the attached draft Wetland Offset Measures Plan.

The Plan can be accessed electronically at this link:
https://www.hydro.mb.ca/projects/mb_mn_transmission/pdfs/wetland_offset_measures_plan_draft.pdf

This document outlines Manitoba Hydro's plan for offsets for permanent wetland losses with the goal of no net loss of wetlands as a result of the project. This Plan follows the requirements dictated under the Province of Manitoba's *The Water Rights Act* and Water Rights Regulation. Manitoba Hydro is seeking input from provincial and federal authorities, non-government expert bodies and impacted Indigenous communities.

Please provide any feedback on this plan by January 17th, 2020.

For your reference, federal certificate condition 26 and provincial licence condition 36 state:

26. Wetland Offset Measures Plan
Manitoba Hydro must file with the Board for approval, ***within ninety (90) days of commencing operation of the Project****, a Wetland Offset Measures Plan which outlines how permanent loss to wetlands resulting from the Project will be offset or compensated for. This plan must include:*

> *a) a description of site-specific details and maps showing the locations of permanent wetland loss as a result of Project activities at Dorsey Converter Station and the transmission tower locations, as well as any other locations where wetlands were affected by the Project;*

b) an explanation of how wetland function will be measured during the post-construction monitoring program, and any resulting accidental permanent loss to wetlands quantified and reported to the Board as part of Condition 23;
c) a list of the offset or compensation measures that will be implemented to address permanent loss of wetlands as identified in a) and b) above;
d) an explanation of the expected effectiveness of each offset measure described in c) and the relative value of each offset measure towards achieving the offset;
e) the decision-making criteria for selecting specific offset measures and offset ratios that would be used under what circumstances;
f) a schedule indicating when measures will be implemented and estimated completion date(s);
g) evidence and summary of consultation with provincial and federal authorities, any non-governmental expert bodies, and any impacted Indigenous communities regarding the plan; and,
h) this summary must include a description of any issues or concerns raised regarding the plan by Indigenous communities, and how Manitoba Hydro has addressed or responded to them.

For your reference, the Provincial authorization for the Project under *The Environment Act* (licence #3288) includes condition 36:

Wetlands
36. The Licencee shall, within three months of the completion of construction of the Development, submit a plan for approval of the Director of the Environmental Approvals Branch to ensure that there is no net loss of wetland benefits related to Class 3, 4, and 5 wetlands (as defined by the Stewart & Kantrud Classification System) that are altered or destroyed during construction of the Development.

Should you have any questions or wish to discuss, please do not hesitate to contact me at 204-360-3016 (scoughlin@hydro.mb.ca) or Jonathan Wiens at 204-360-6623 (jwiens@hydro.mb.ca). If you will not be reviewing and providing feedback on the document, we ask that you please inform us.

Regards,

Original signed by

Sarah Coughlin
Licensing and Environmental Assessment Department
Manitoba Hydro
360 Portage Ave (5)
Winnipeg, Manitoba
R3C 0G8

Attachment: 1

Manitoba Hydro
5-360 Portage Avenue • Winnipeg, Manitoba Canada • R3C 0G8
(204) 360-3016 • scoughlin@hydro.mb.ca

November 29, 2019

Carmen Kardoes
Regional Director, Governance and Community Development
Indigenous and Northern Affairs Canada
365 Hargrave St Room 200
Winnipeg, MB R3B 3A3

Dear Carmen Kardoes:

RE: Manitoba-Minnesota Transmission Project– Wetland Offset Measures Plan

Pursuant to Manitoba-Minnesota Transmission Project National Energy Board Certificate of Public Convenience and Necessity EC-059 condition 26, Manitoba Hydro is seeking feedback from your agency on the attached draft Wetland Offset Measures Plan.

The Plan can be accessed electronically at this link:
https://www.hydro.mb.ca/projects/mb_mn_transmission/pdfs/wetland_offset_measures_plan_draft.pdf

This document outlines Manitoba Hydro's plan for offsets for permanent wetland losses with the goal of no net loss of wetlands as a result of the project. This Plan follows the requirements dictated under the Province of Manitoba's *The Water Rights Act* and Water Rights Regulation. Manitoba Hydro is seeking input from provincial and federal authorities, non-government expert bodies and impacted Indigenous communities.

Please provide any feedback on this plan by January 17th, 2020.

For your reference, federal certificate condition 26 and provincial licence condition 36 state:

26. Wetland Offset Measures Plan
Manitoba Hydro must file with the Board for approval, ***within ninety (90) days of commencing operation of the Project****, a Wetland Offset Measures Plan which outlines how permanent loss to wetlands resulting from the Project will be offset or compensated for. This plan must include:*

a) a description of site-specific details and maps showing the locations of permanent wetland loss as a result of Project activities at Dorsey Converter Station and the transmission tower locations, as well as any other locations where wetlands were affected by the Project;

b) an explanation of how wetland function will be measured during the post-construction monitoring program, and any resulting accidental permanent loss to wetlands quantified and reported to the Board as part of Condition 23;

c) a list of the offset or compensation measures that will be implemented to address permanent loss of wetlands as identified in a) and b) above;
d) an explanation of the expected effectiveness of each offset measure described in c) and the relative value of each offset measure towards achieving the offset;
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g) evidence and summary of consultation with provincial and federal authorities, any non-governmental expert bodies, and any impacted Indigenous communities regarding the plan; and,
h) this summary must include a description of any issues or concerns raised regarding the plan by Indigenous communities, and how Manitoba Hydro has addressed or responded to them.

For your reference, the Provincial authorization for the Project under *The Environment Act* (licence #3288) includes condition 36:

Wetlands
36. The Licencee shall, within three months of the completion of construction of the Development, submit a plan for approval of the Director of the Environmental Approvals Branch to ensure that there is no net loss of wetland benefits related to Class 3, 4, and 5 wetlands (as defined by the Stewart & Kantrud Classification System) that are altered or destroyed during construction of the Development.

Should you have any questions or wish to discuss, please do not hesitate to contact me at 204-360-3016 (scoughlin@hydro.mb.ca) or Jonathan Wiens at 204-360-6623 (jwiens@hydro.mb.ca). If you will not be reviewing and providing feedback on the document, we ask that you please inform us.

Regards,

Original signed by

Sarah Coughlin
Licensing and Environmental Assessment Department
Manitoba Hydro
360 Portage Ave (5)
Winnipeg, Manitoba
R3C 0G8

Attachment: 1

Response from provincial and federal authorities:

Manitoba
Conservation and Climate
Environmental Approvals Branch
1007 Century Street, Winnipeg MB R3H 0W4
T 204-945-8321 **F** 204-945-5229
www.manitoba.ca

File No. 5750.00

April 8, 2020

Mr. James Matthewson
Manitoba Hydro
360 Portage Ave (5)
Winnipeg, MB R3C 0G8

Dear Mr. Matthewson:

Re: Manitoba-Minnesota Transmission Project, Environment Act Licence 3288 – Draft Wetland Offset Plan

Thank you for your letter of November 28, 2019 requesting feedback on the Draft Wetland Offset Measures Plan for the Manitoba-Minnesota Transmission Project required by Clause 36 of Environment Act Licence 3288. Based on the Technical Advisory Committee's review of the draft plan, Manitoba has the following comments.

- The draft plan proposes compensation for only the footprint of the tower foundations. Manitoba is concerned that the total impacts of the clearing, towers, and conductors on wetland benefits (e.g. hydrology and wildlife habitat) will extend beyond the tower footprints. If Manitoba Hydro proposes to compensate only for the area of the tower footprints, supporting scientific information should be provided.
- The draft wetland offset plan should identify which wetland classification system is being used when referring to wetlands. Terms from both the Stewart and Kantrud Wetland Classification System (i.e. Class 3,4,5) are used as well as terms similar to those used in the Canadian Wetland Classification (e.g. peatland fen, mineral wetland swamp, peatland bog, etc.).
- While efforts to reduce impacts to wetlands during construction have been identified, accidental or unforeseen loss of wetlands due to construction must be assessed and compensated for. Section 4.2 of the draft plan states that monitoring will continue for two years post construction and that any resulting accidental permanent loss to wetlands will be quantified and reported annually to the Board. Any additional loss of benefits associated with Class 3, 4, and 5 wetlands identified post construction must be reported to Manitoba Conservation and Climate and compensated for in accordance with the wetland area calculations and compensation values approved in the final plan, within eight months of reporting.

If you have any questions regarding this matter, please contact me at Elise.Dagdick@gov.mb.ca.

Yours sincerely,

[redacted]

Elise Dagdick
Environment Officer

From:	Coughlin, Sarah
To:	Coughlin, Sarah (scoughlin@hydro.mb.ca)
Subject:	FW: Manitoba Minnesota Transmission Line Crown Land Offset Measures Plan - for your review/feedback
Date:	Friday, January 3, 2020 12:12:00 PM

From: "Gregoire, Paul (EC)" <paul.gregoire@canada.ca>
Date: December 2, 2019 at 4:13:59 PM CST
To: "Bratland, Maggie" <mbratland@hydro.mb.ca>
Subject: RE: Manitoba Minnesota Transmission Line Crown Land Offset Measures Plan - for your review/feedback

Hello Maggie and thank you for the information.

I have reviewed both the draft Crown Land Offset Measures Plan and the draft Wetland Offset Measures Plan and have not identified any concerns. I note that the lands will be put in the care of the province of Manitoba for action.

Regards,
Paul

Paul Gregoire, MSc.
A/Manager Regulatory Affairs Section
Canadian Wildlife Service | Service canadien de la faune
Prairie Region | Région des Prairies
Environment and Climate Change Canada | Environnement et Changement Climatique Canada
Eastgate Offices, 9250 – 49th Street
Edmonton, Alberta T6B 1K5
paul.gregoire@canada.ca
Telephone | Téléphone 780-951-8695

From: Bratland, Maggie <mbratland@hydro.mb.ca>
Sent: Thursday, November 28, 2019 12:07 PM
To: Gregoire, Paul (EC) <paul.gregoire@canada.ca>
Subject: Manitoba Minnesota Transmission Line Crown Land Offset Measures Plan - for your review/feedback

Hello again Paul –

We have a second Offset Measures Draft plan that we would like to provide for your review and feedback , that pertains to Crown Lands. Please see the attached letter and the link below for the plan itself.

Natural Resources Canada | Ressources naturelles Canada

JAN 10 2020

Sarah Coughlin
Licensing and Environmental Assessment Department
Manitoba Hydro
360 Portage Avenue
Winnipeg, MB
R3C 0G8

Subject: Manitoba-Minnesota Transmission Project – Crown Land Offset Measures Plan and Wetland Offset Measures Plan

Dear Ms. Coughlin

Thank you for your letters dated November 29, 2019 regarding Manitoba Hydro's Crown Land Offset Measures Plan and Wetland Offset Measures Plan for the Manitoba-Minnesota Transmission Project. I appreciate Manitoba Hydro providing Natural Resources Canada (NRCan) the opportunity to review and comment on these plans.

NRCan notes that the Government of Canada is relying on Manitoba Hydro's compliance with Canada Energy Regulator (CER) Conditions 22 and 26 to accommodate potential impacts to Indigenous groups' Aboriginal and Treaty Rights. As such, NRCan encourages Manitoba Hydro to consider the views raised by Indigenous communities during the engagement activities described in Section 5 of both plans.

With respect to the Crown Land Offset Measures Plan, the CER will determine whether Manitoba Hydro has adequately measured and defined the "permanent loss of crown lands available for traditional use by Indigenous peoples." NRCan expects that lands acquired to comply with CER Condition 22 will be suitable for the exercise of potentially impacted Indigenous groups' Aboriginal and Treaty rights.

Sincerely,

[redacted]

Sébastien Labelle
Director General
Major Projects Management Office
Natural Resources Canada

Canada

From: Atiomo, Emmanuel (AADNC/AANDC)
To: Watson, Diana (AADNC/AANDC); Coughlin, Sarah
Subject: RE: MMTP EC-059 draft Condition consultation request
Date: Wednesday, January 22, 2020 9:16:08 AM

We have no further comments to add. thanks

From: Watson, Diana (AADNC/AANDC) <diana.watson@canada.ca>
Sent: Tuesday, January 21, 2020 1:29 PM
To: Coughlin, Sarah <scoughlin@hydro.mb.ca>
Cc: Atiomo, Emmanuel (AADNC/AANDC) <emmanuel.atiomo@canada.ca>
Subject: RE: MMTP EC-059 draft Condition consultation request

Hi Sarah,

No, I don't have anything further to add.

Emmanuel, if you have additional comments please provide them, if not, please advise you have nothing further to add.

Diana

From: Coughlin, Sarah <scoughlin@hydro.mb.ca>
Sent: Tuesday, January 21, 2020 11:48 AM
To: Watson, Diana (AADNC/AANDC) <diana.watson@canada.ca>
Subject: RE: MMTP EC-059 draft Condition consultation request

Good afternoon Diana. Will we be receiving any further comments from ISC regarding Conditions 22 and 26?

Thank you.

Sarah Coughlin
Senior Environmental Specialist
Licensing & Environmental Assessment
Transmission, Manitoba Hydro
360 Portage Ave, Winnipeg, MB
w (204) 360-3016
c (204) 918-9848
scoughlin@hydro.mb.ca

From: Watson, Diana (AADNC/AANDC) <diana.watson@canada.ca>
Sent: Friday, January 03, 2020 8:39 AM
To: Coughlin, Sarah <scoughlin@hydro.mb.ca>
Cc: Atiomo, Emmanuel (AADNC/AANDC) <emmanuel.atiomo@canada.ca>
Subject: RE: MMTP EC-059 draft Condition consultation request

Hi Sarah,

Here are the comments I received from our Environment Unit:

Include in Table 1 Sec. 4.0 a column on valued ecosystem (specific use of the land in question) so that we can assess the significance of the impact, the appropriateness of the proposed Mitigation and on how to measure 4.0 (d).

The following federal departments should receive the documents, Impact Assessment Agency (former CEAA for federal coordination), Transport Canada (nav. waters) Department of Fisheries and Ocean (stream crossing impact on Fish) and Environment and Climatic Change Canada (species at risk).

Thanks very much and if you have any questions, please let me know.

Diana

Diana Watson
Director, Lands and Economic Development
Indigenous Services Canada / Government of Canada
diana.watson@canada.ca / Tel: 204-983-5523 / TTY: 1-866-553-0554

From: Coughlin, Sarah <scoughlin@hydro.mb.ca>
Sent: Wednesday, December 18, 2019 3:07 PM
To: Watson, Diana (AADNC/AANDC) <diana.watson@canada.ca>; Kardoes, Carmen (AADNC/AANDC) <carmen.kardoes@canada.ca>
Subject: RE: MMTP EC-059 draft Condition consultation request

We initiated discussions on both of these conditions with impacted Indigenous communities in November. 20 First Nation communities and the MMF have been asked to review and comment on the plans. Communities have been offered funding to conduct that review and we've worked with the MMTP Monitoring Committee to hold a special meeting on this topic so representatives can discuss concerns collectively as well.

I can provide more detail when we chat tomorrow.

Response to provincial and federal authorities:

Manitoba Hydro

5-360 Portage Avenue • Winnipeg, Manitoba Canada • R3C 0G8

July 24nd, 2020 File No. 5750

Elise Dagdick
Environment Officer
Environmental Approvals Branch
Manitoba Conservation and Climate
1007 Century Street, Winnipeg MB, R3H 0W4

Dear Elise Dagdick:

RE: Manitoba-Minnesota Transmission Project– Draft Wetland Offset Measures Plan and No Net Loss of Wetlands Plan

Thank you for your letter dated April 8th, 2020. We appreciate your comments on the Manitoba-Minnesota Transmission Project – Draft Wetland Offset Measures Plan and No Net Loss of Wetlands Plan (the Plan). Please see Manitoba Hydro's responses to your comments and recommendations below:

1. *The draft plan proposes compensation for only the footprint of the tower foundations. Manitoba is concerned that the total impacts of the clearing, towers, and conductors on wetland benefits (e.g. hydrology and wildlife habitat) will extend beyond the tower footprints. If Manitoba Hydro proposes to compensate only for the area of the tower footprints, supporting scientific information should be provided;*

Manitoba Hydro recognizes the potential for altering wetland benefits as a result of the Project and has therefore developed a rigorous set of mitigation measures to minimize and prevent wetland damage across the Project right-of-way. One of these mitigation measures includes the commitment that;

> *"Disturbance of wetlands will only be carried out under frozen ground conditions. If frozen ground conditions do not exist alternate mitigation measures such as construction matting may be used to minimize surface damage, rutting and erosion if approved by MH environmental Officer/Inspector.*"

Details on further mitigation measures applied to clearing, towers, and conductors near wetlands, such as the installation of bird diverters, can be found in the MMTP Construction Environmental Protection Plan and Table 1 of the draft Plan. These measures have been implemented to minimize effects to hydrology and wildlife habitat. As outlined in Section 10.5.3.1 of the MMTP Environmental Impact Statement, changes to hydrology from construction activities are not expected.

Manitoba Hydro has also developed a MMTP Rehabilitation and Invasive Species Management Plan and a MMTP Environmental Monitoring Plan to examine the effectiveness of these mitigation measures. Reporting of these results will be provided annually as per the Plan.

Supporting scientific evidence that wetland compensation should be limited to the tower footprints is also attached to this response. This includes the following summary documents demonstrating limited

effects of transmission line development for vegetation and birds from recent transmission line construction projects in Manitoba:

- *Effects on wetland within the Bipole III transmission line project;*
- *Effects of transmission line on wetlands birds.*

As jurisdictional comparison, we also attach a copy of the Province of Alberta's "Code of Practice for Powerline Works Impacting Wetlands". This document outlines requirements for wetland protection while commencing or carrying out powerline activities. Under this code of practice, compensation for wetland loss is not required, and mitigation and minimization requirements generally align with the wetland protection measures outlined in the MMTP Construction Environmental Protection Plans.

2. *"The draft wetland offset plan should identify which wetland classification system is being used. Terms from both the Stewart and Kantrud Wetland Classification System (i.e. Class 3,4,5) are used as well as terms similar to those used in the Canadian Wetland Classification (e.g. peatland fen, mineral wetland swamp, peatland bog, etc.)";*

Manitoba Hydro will update the Wetland Offset Measures Plan to better distinguish utilization between where the Stewart and Kantrud Wetland Classification System and the Canadian Wetland Classification System. This will be reflected in Appendix B. Manitoba Hydro would like to point out that wetland offsets are being offered **for all wetlands** being lost as a result of the Project, and not just Kantrud and Stewart Class 3, 4, 5.

3. *While efforts to reduce impacts to wetlands during construction have been identified, accidental or unforeseen loss of wetlands due to construction must be assessed and compensated for. Section 4.2 of the draft plan states that monitoring will continue for two years post construction and that any resulting accidental permanent loss to wetlands will be quantified and reported annually to the Board. Any additional loss of benefits associated with Class 3, 4, and 5 wetlands identified post construction must be reported to Manitoba Conservation and Climate and compensated for in accordance with the wetland area calculations and compensation values approved in the final plan, within eight months of reporting.*

Manitoba Hydro will compensate in accordance with the wetland area calculations and compensation values approved in the final plan for accidental or unforeseen permanent loss of any wetlands at the end of construction phase. This will also be reported to Manitoba Conservation and Climate. Manitoba Hydro will amend Section 4.2 to include these commitments.

Thank you again for your comments and we hope these responses address your recommendations. We expect to release a final draft of the Plan in the coming weeks.

Regards,

Original signed by

James Matthewson
Licensing and Environmental Assessment Department
Manitoba Hydro
360 Portage Ave (5) Winnipeg,
MB, R3C 0G8

Attach. 3

Code of Practice for
Powerline Works Impacting Wetlands

Made under the Water Act and the

Water (Ministerial) Regulation

Table of Contents Page

DEFINITIONS

1(1) All definitions in the *Water Act* and associated regulations shall apply, except where expressly defined in this Code of Practice.

(2) For the purpose of this Code of Practice,

(a) "authenticating wetland professional" means a professional member who meets the requirements set forth in Professional Responsibilities in *Completion and Assurance of Wetland Science, Design and Engineering Works in Alberta,* as amended or replaced from time to time, to be able to authenticate professional documents for submission under the *Alberta Wetland Policy*, published by the Department and as amended or replaced from time to time;

(b) "Code of Practice" means the *Code of Practice for Powerline Works Impacting Wetlands*, as amended or replaced from time to time;

(c) "delineation" means the process used to identify wetlands and delineate their ecological boundaries as set forth in *Alberta Wetland Identification and Delineation Directive,* as amended or replaced from time to time;

(d) "emergency" means a situation where there is an imminent risk to the aquatic environment, public health or safety, or an imminent risk of structural failure to a powerline works;

(e) "engineering technical specialist" means a person who
  (i) possesses
    (A) a post-secondary degree or technical diploma in engineering sciences, or
    (B) educational equivalencies,
  (ii) has knowledge of hydrology, hydrogeology and water management assessment, and
  (iii) is currently experienced in water management and hydrological assessment methods, the determination of expected flows for flood events and the designing of power and transmissions lines;

(f) "owner" means
  (i) the person who owns, places, constructs, operates, installs, maintains, removes or disturbs a powerline works, or drills or reclaims a borehole in a wetland,
  (ii) a successor, assignee, executor, administrator, receiver, receiver-manager, liquidator or trustee of a person described in clause (i), or
  (iii) a person who acts as the principal or agent of a person described in clause (i) or (ii);

(g) "powerline activity" means an activity related to powerline works that impact a wetland, as described in section 3(7) of the *Water (Ministerial) Regulation*;

(h) "powerline works" means a system or arrangement of lines or wire or other conductors and transformation equipment, whereby electric energy, however produced, is transmitted in bulk or distributed directly to consumers and includes any associated permanent or temporary structure

that is or will be constructed for the installation, maintenance or protection of the line, including but not limited to:

(i) transmission or distribution circuits composed of the conductors that form the minimum set required to transmit electrical energy,
(ii) insulating and supporting structures,
(iii) operational and control devices, and
(iv) structures for erosion

protection, but does not include

(v) a substation or power plant,
(vi) a pipeline crossing or telecommunication line crossing as defined in the Code of Practice for Pipeline and Telecommunication Lines Crossing a Water Body, or
(vii) a watercourse crossing for vehicles or equipment as defined in the Code of Practice for Watercourse Crossings;

(i) "professional engineer" means a professional engineer as defined in the *Engineering and Geoscience Professions Act,* as amended or replaced from time to time;

(j) "structure" means the supporting portions of the powerline works that is in contact with the ground including but not limited to:
(i) towers and poles and their foundations,
(ii) insulating structures and their foundations,
(iii) operational and control devices and their foundations, and
(iv) erosions control structures and their foundations;

(k) "UTM coordinates" means coordinates that use the Universal Transverse Mercator grid to identify or plot the specific location of a site or object;

(l) "wetland" means land saturated with water long enough to promote wetland or aquatic processes as indicated by the poorly drained soils, hydrophytic vegetation, and various kinds of biological activity that are adapted to a wet environment;

(m) "wetland impacts" mean any disturbance in a wetland or part of a wetland from a powerline activity.

APPLICATION

2(1) This Code of Practice applies to:

(a) placing, constructing, operating, installing, maintaining, removing or disturbing of works related to a powerline that impact a wetland, and the drilling or reclaiming of a borehole in a wetland;

(b) aboveground structures within a wetland where the total footprint of each structure is equal to or less than 0.005 hectares; and

(c) reclamation of wetland impacts related to a powerline activity, including the removal of

powerline works.

(2) This Code of Practice does not apply to buried powerline works.

COMPLIANCE WITH THE CODE OF PRACTICE

3 For the purposes of section 3(7) of the *Water (Ministerial) Regulation,* an owner shall comply with the requirements set out in this Code of Practice.

NOTICE TO THE DIRECTOR

4(1) Notwithstanding section 4(1) of the *Water (Ministerial) Regulation*, unless another time period is agreed to by the Director, an owner shall provide notice to the Director at least 14 calendar days prior to commencing a powerline activity.

(2) After notice to the Director has been provided for the commencement of a powerline activity, the owner may change any of the information provided to the Director, as long as:

(a) the change complies with this Code of Practice; and

(b) notice of the change is provided to the Director in accordance with subsection (1).

(3) Notice to the Director under subsection (1) must:

(a) be submitted in the form and manner prescribed by the Director;

(b) include the information provided in the Schedule; and

(c) include any other information as requested by the Director.

EMERGENCY

5(1) Where there is an emergency and it is not possible for an owner to provide notice in accordance with section 4, the owner must:

(a) take appropriate measures to address the emergency; and

(b) notify the Director of the emergency within 24 hours of becoming aware of the emergency, with any information regarding the nature of the emergency that is available to the owner at the time.

(2) Within 30 days of completion of the appropriate measures to deal with the emergency, or another time period as agreed to by the Director, the owner must submit the following information to the Director:

(a) a chronology of events before, during and after the emergency;

(b) a description of any damage to the powerline works caused by the emergency;

(c) a description of the actions taken by the owner during and after the emergency;

(d) a description of any powerline activity that has been or will be taken as a result of the emergency, including repairs or changes to the powerline works;

(e) a statement as to whether the owner
  (i) complied with section 7, and
  (ii) incorporated the specifications, measures and recommendations of any reports prepared under section 8 by a qualified professional.

(3) Notice under this section must be in the form and manner prescribed by the Director.

CONTRAVENTIONS

6(1) In the event of a contravention of this Code of Practice, the owner must do the following:

(a) take appropriate measures to address the contravention; and

(b) notify the Director of the contravention within 24 hours of becoming aware of the contravention, with any information regarding the nature of the contravention that is available to the owner at the time.

(2) Within 7 calendar days of the immediate reporting under subsection (1), the owner must submit the following information to the Director:

(a) a description of the contravention;

(b) an explanation as to why the contravention occurred;

(c) a summary of all measures that were taken to mitigate the adverse effects to the aquatic environment related to the contravention;

(d) the names, addresses, phone numbers and responsibilities of the owner that carries out a powerline activity, including any persons that were retained or employed by the owner, at the time that the contravention occurred; and

(e) any proposed preventative measures designed to prevent future contraventions.

(3) Notice under this section must be in the form and manner prescribed by the Director.

STANDARDS FOR CARRYING OUT A POWERLINE ACTIVITY

7 An owner who commences, continues or carries on a powerline activity under this Code of Practice shall:

(a) carry out the powerline activity in a manner that is designed to prevent adverse effects to the aquatic environment;

(b) ensure each structure within a wetland does not exceed a total footprint of 0.005 hectares;

(c) develop a sedimentation and erosion plan prior to commencing the powerline activity and implement the plan while conducting the powerline activity;

(d) develop a plan to prevent the transfer of non-indigenous biota to the aquatic environment prior to commencing the powerline activity and implement the plan while conducting the powerline activity;

(e) stabilize all powerline works that impact a wetland for the life span of the works;

(f) ensure that any materials used in powerline works that come into contact, or are expected to come into contact, with the ground, groundwater, or surface water within a wetland are non- reactive/inert;

(g) upon completion of the powerline activity, ensure that the wetland area, excluding the footprint of any structure, equals the wetland area that existed prior to the carrying out of the powerline activity;

(h) upon completion of the powerline activity, ensure that any changes to the hydraulic, hydrologic, or hydrogeological characteristics of the wetland, with the exception of changes resulting from the powerline structure, be restored to the condition that existed prior to the carrying out of the powerline activity; and

(i) develop a reclamation plan for all impacted wetlands prior to commencing any powerline activity and implement the plan while :
(i) conducting the powerline activity, and
(ii) removing any powerline works.

QUALIFIED PROFESSIONAL REPORTS

8(1) Subject to subsection (2), and prior to providing notice to the Director under section 4, the owner shall retain a professional engineer or engineering technical specialist to prepare a report that includes the following information:

(a) the type of material used for the construction of powerline works, including any material that is expected to come into contact with the ground, groundwater, or surface water;

(b) a description of any structure that is part of the powerline works, including but not limited to guy wire anchors and slugs, temporary rider poles, pilings and caissons;

(c) any surveyed and unsurveyed profiles and cross-sectional drawings required for the design; and

(d) any other information considered relevant by the professional engineer or engineering technical specialist.

(2) A report under this section is not required for the following:

(a) the removal of powerline works; or

(b) the maintenance of powerline works.

(3) In the event a report is not required under subsection (2), the owner must prepare in writing the information contained in subsection (1)(a) to (c) and make it available upon request of the Director.

9(1) Subject to subsection (3), and prior to providing notice to the Director under section 4, the owner shall retain an authenticating wetland professional to prepare a report that includes the following information:

(a) a map, diagram, or air photo that shows the location of the proposed powerline works including the legal description of the land, and the UTM coordinates, if available;

(b) a description of the powerline activity;

(c) a delineation of the wetland where wetland impacts have or will be expected to occur;

(d) a description of the anticipated wetland impacts, including the total wetland impact, in hectares, resulting from the combined footprint of all structures;

(e) a description of all measures the owner should take to meet the standards set out under section 7;

(f) any information and assessments used to prepare the report, including:
  (i) any existing information, published and unpublished reports reviewed,
  (ii) any new information gathered through assessments, and
  (iii) any reports prepared by the authenticating wetland professional;

(g) a compilation of physical and biological data related to the wetland where wetland impacts have occurred, including:
  (i) a description of all living organisms that could be present at any time during the year,
  (ii) a description of the existing wetland class in accordance with the Alberta Wetland Classification System, and
  (iii) a description of the hydrological characteristics of the wetland.

(h) a description of any assessment conducted, including study sites, methods used, dates and times; and

(i) any other information considered relevant by the authenticating wetland professional.

(2) In the event the information listed under subsection (1) cannot be compiled using desktop methods, a field assessment must be conducted.

(3) A report under this section is not required for the following:

(a) the removal of powerline works;

(b) the maintenance of powerline works; or

(c) the replacement of a structure that does not result in an increase in the loss of wetland area relative to the loss that existed prior to the replacement.

(4) Notwithstanding subsection (3), unless an emergency has occurred, if any powerline activity cannot be carried out during firm or frozen ground conditions, a report under this section is

required.

(5) For the purpose of this section, "firm or frozen ground conditions" mean soil conditions that will support the equipment conducting the powerline activity and will not cause an adverse effect to the wetland, including, but not limited to, rutting, compaction, or siltation.

RECORDKEEPING

10(1) The owner shall record and retain all the following information for a minimum of five years after the completion of powerline activity, unless another time period is agreed to by the Director:

(a) the names, addresses and phone numbers of any person who carried out a powerline activity;

(b) a copy of any plans prepared for the construction of powerline works;

(c) any as built plans or as constructed plans, if such as built or as constructed plans were prepared;

(d) the time period over which the carrying out of any powerline activity occurred, including
(i) the start and completion dates, and
(ii) the duration of time each day that any powerline activity was carried out;

(e) all photographs or video-recordings taken of the wetland area before and after conducting the powerline activity;

(f) a copy of all reports prepared by any qualified professional or, in the event the report of a qualified professional is not required, the information the owner is required to compile under sections 8(3).

(2) When requested in writing by the Director, the owner must submit any requested information or records retained under subsection (1) to the Director in the time frame specified by the Director.

SCHEDULE

Notice to the Director

Information that must be contained in a notice for the purposes of section 4:

(a) name and contact information of the owner of the powerline works;

(b) name and contact information of the owner's authorized representative;

(c) legal land description(s) of the impacted wetland;

(d) a map, diagram, or air photo that shows the location of the proposed powerline works including the legal description of the land, and the UTM coordinates, if available;

(e) whether any reports were prepared by a qualified professional;

(f) wetland type and classification;

(g) tentative commencement and completion dates of the powerline activity; and

(h) a description of the proposed powerline activity, including:
  (i) methods of placement, operation, installation, removal, maintenance or replacement of powerline works,
  (ii) the outside diameter of each structure within the wetland, and
  (iii) construction methods and conditions.

EFFECTS ON WETLANDS

within the

BIPOLE III TRANSMISSION LINE PROJECT

April 2020

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1.0 INTRODUCTION

The purpose of this study was to assess the effects on wetland vegetation within the Bipole III Transmission Line Project.

On August 14, 2013, Manitoba Conservation and Water Stewardship granted an Environment Act Licence to Manitoba Hydro for the construction, operation, and maintenance of the Bipole III Transmission Project. Clearing and construction for the project began in 2014 and was completed during the winter of 2017-2018 (2018 in-service date).

Bipole III is a new high voltage direct current (HVDC) transmission project required to improve overall system reliability and dependability. The Bipole III Transmission Project involved the construction of a 500 kilovolt (kV) HVDC (high voltage direct current) transmission line that links the northern power generating complex on the Lower Nelson River with the conversion and delivery system in southern Manitoba.

Environmental monitoring of the transmission project began in 2014 and included monitoring of terrestrial vegetation (forested), wetlands, prairie habitat, traditional resource areas, invasive and non-native species, and species of conservation concern.

The specific objectives established for this study were as follows:

- Identify monitoring sites established for wetlands;
- Review and summarize data and environmental effects on wetlands; and
- Provide photographs showing monitoring sites over time.

2.0 METHODS

The methods used to assess wetland vegetation can be divided into three groups: i) those used for project review; ii) those used to sample, survey and monitor the vegetation; iii) and the techniques used to describe the data.

2.1 Project Review

Project information and data used for this study were based on the environmental monitoring and subsequent reports prepared for the project from 2014 to 2019 (Szwaluk Environmental Consulting et al. 2015, 2016a, 2016b, 2017, 2018, and 2019).

A total of 11 wetland sites were identified for analyses. These sites were monitored during construction and post-construction. The wetland sites sampled were identified as patterned fen wetlands, and were labelled as environmentally sensitive sites in the

environmental protection plan (Manitoba Hydro 2014) prepared for the project. Project activities were anticipated to affect species of conservation concern present in these wetlands. Approximately 535 ha of patterned fen wetlands occur within the transmission line right-of-way (RoW).

2.2 Vegetation Monitoring

Monitoring of vegetation consisted of establishing sample plots on sites with relatively homogenous vegetation. Transects were permanently located along the transmission line RoW, longitudinally, and approximately in the center of the RoW, but generally off the equipment path. Vegetation was sampled for composition, abundance and structure. Sampling of selected sites followed methods outlined by Redburn and Strong (2008) and involved the establishment of five 2.5 m by 2.5 m quadrats with a 1 m by 1 m nested quadrat spaced at 5 m increments along a 30 m transect for shrubs 1 - 2.5 m tall and herbs and low shrubs 1 m tall respectively. The first quadrat was placed at the 5 m mark. The composition of tree cover >2.5 m tall was estimated using a 20 m by 30 m plot centered on each transect. Plant cover was estimated to the nearest 1% for species <15% cover and nearest 5% for those with higher cover. Other incidentally observed species were recorded. Ground cover estimates (percent) were recorded and included exposed soil, litter, rock, water and wood. Site condition measurements included percent slope and aspect. Plot locations were marked at the beginning of each transect with GPS coordinates, and staked with a 30 cm section of conduit pipe driven into the ground with a pin flag inserted. Reference sites that shared similar natural conditions were established adjacent to the RoW, where possible. Plots began approximately 5 m from the RoW edge, using identical quantitative sampling methods. Photographs were captured at each monitoring site.

2.3 Rare Plant Monitoring

Species of conservation concern encompass plants ranked as rare elements by the Manitoba Conservation Data Centre (MBCDC 2018). The ranking of species used by the MBCDC according to a standardized procedure used by Conservation Data Centres and Natural Heritage Programs includes a series of ranks on a five-point scale from critically imperilled (S1) to secure (S5).

Areas with high potential to support species of conservation concern were identified for surveys. Monitoring occurred at selected sites to investigate species presence, abundance and extent. Photographs of plants were taken.

2.4 Data Preparation and Analyses

After field sampling (2014 through 2019), data was digitized and verified for accuracy. For each plot with quantitative sampling, mean values for vegetation percent cover were calculated for plots with a tall shrub stratum, herb and low shrub stratum, non-vascular stratum, as well as inanimate ground cover. All sites were stratified by vegetation type.

Total species cover (summed % plant cover) and species richness (actual number of species present) were determined for each plot. Species diversity was calculated using the Shannon diversity index, which combines species richness with relative abundance. Equitability was calculated to determine the evenness of species in their distribution within the site. The diversity index values fall generally between 1.5 (i.e. low diversity) and
3.5 (Kent and Coker 1996, p97). The equitability (or evenness) value, with an upper limit of 1, is a measure of whether species abundance in a community is evenly distributed. Diversity and evenness measures were calculated in Excel.

Sites were described by classifying community types based on plant species composition and abundances using hierarchical cluster analysis. Ward's method was used as the clustering algorithm, with squared Euclidean distance as the dissimilarity measure. Where vegetation community types are listed, naming was based on their structure and species dominance by stratum.

The sample size for this study influences the statistical analyses performed. Specific tests available are dependent upon the distribution of data (e.g., parametric versus non- parametric). The increased variability from the sample size reduces the ability to detect an effect when one is present. Accordingly, data were not subject to inferential statistical analyses.

3.0 RESULTS

3.1 Data Analysis of Environmentally Sensitive Wetlands

Seven environmentally sensitive patterned fen wetlands were monitored during construction and post-construction, from 2014 through 2019. Ground surveys were conducted to identify wetland changes not discernible from habitat mapping and to monitor wetland protection measures. In 2014, three monitoring sites were established on the RoW in Section N3, while four additional sites established in 2015, after clearing in Section N4. Of the seven sites surveyed, four were paired sites with off-RoW samples. Vegetation descriptions for the environmentally sensitive wetlands include species cover and richness, diversity and evenness, with mean values for all years monitoring on- and off- RoW.

Since initial clearing there continues to be a trend of lower mean species cover in sites on- RoW, when compared to off-RoW sites, shown in Table 3-1a. Lower vegetation cover values are due to the removal of sparse tree and tree sapling cover, and other low growing woody species on the RoW. The off-RoW sites in N3 are further distinguished from on-RoW sites by increased moss cover and much reduced surface water, which tends to allow for increased vegetation cover. Consequently, cover values on the RoW in N3 are unlikely to match those off-RoW. In N4, off-RoW sites are distinguished by a very sparse tree and or sapling layer and increased moss cover. On the RoW, the average species cover is variable in any given year, perhaps due to fluctuating water levels. In 2016, forest tent caterpillar activity was observed at two sites (N4WET100; -400). The highest average total percent cover in paired surveys on the RoW was 72% and 71% in 2017 and 2019, respectively.

Species richness values or total number of species tend to be lower in wetland sites on- RoW, but a trend of increasing richness is shown over successive years of sampling. In 2019, the average number of species is 26.8 in paired surveys, slightly lower than off-RoW with 28.8. The diversity index and species evenness continue to have similar values across all years and between paired surveys on and off-RoW, shown in Table 3-1b. Clearing activities in wetlands has not affected these species measures.

Table 3-1a. Vegetation measures on and off RoW: species cover and richness.

Site	Total Species Cover (%)							Species Richness						
	RoW						Off	RoW						Off
	2014	2015	2016	2017	2018	2019	RoW	2014	2015	2016	2017	2018	2019	RoW
N4WET100	-	61.0	48.4	97.6	88.6	118.2	81.6	-	17	18	22	27	28	24
N4WET200	-	16.6	33.0	57.6	52.2	55.8	70.0	-	24	28	26	30	30	32
N4WET300	-	47.4	19.2	58.0	38.6	69.2	-	-	25	19	27	27	25	-
N4WET400	-	16.3	8.6	13.8	19.6	25.0	-	-	8	7	9	12	11	-
N3WET100	81.4	79.8	43.6	121.4	88.2	76.2	-	23	28	26	27	31	26	-
N3WET200	56.8	54.0	26.6	40.2	25.2	34.4	119.8	21	23	18	25	22	23	24
N3WET300	68.6	71.8	66.2	92.4	57.4	75.4	147.4	21	26	27	26	30	26	35
Paired Mean (SD) [1]	62.7 (8.3)	50.8 (24.0)	43.3 (17.7)	72.0 (27.6)	55.9 (26.0)	71.0 (35.7)	104.7 (35.5)	21.0 (0)	22.5 (3.9)	22.8 (5.5)	24.8 (1.9)	27.3 (3.8)	26.8 (3.0)	28.8 (5.6)
Total Mean (SD) [1]	68.9 (12.3)	49.6 (25.0)	35.1 (19.4)	68.7 (37.1)	52.8 (27.8)	64.9 (30.8)	104.7 (35.5)	21.7 (1.2)	21.6 (6.9)	20.4 (7.4)	23.1 (6.5)	25.6 (6.7)	24.1 (6.2)	28.8 (5.6)

[1] Standard deviation.

Table 3-1b. Vegetation measures on and off RoW: diversity and evenness.														
Site	**Diversity**							**Evenness**						
	RoW						**Off RoW**	**RoW**						**Off RoW**
	2014	**2015**	**2016**	**2017**	**2018**	**2019**		**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	
N4WET100	-	1.4	2.1	2.0	1.9	2.0	2.1	-	0.5	0.7	0.7	0.6	0.6	0.7
N4WET200	-	2.8	2.6	2.3	2.5	2.6	2.2	-	0.9	0.8	0.7	0.7	0.8	0.6
N4WET300	-	2.1	2.3	2.1	2.3	1.9	-	-	0.6	0.8	0.6	0.7	0.6	-
N4WET400	-	1.7	1.6	1.8	1.8	1.7	-	-	0.8	0.8	0.8	0.7	0.7	-
N3WET100	2.1	1.8	2.1	1.5	2.2	1.9	-	0.7	0.5	0.7	0.4	0.6	0.6	-
N3WET200	1.7	1.5	1.8	2.0	2.4	2.2	1.9	0.6	0.5	0.6	0.6	0.8	0.7	0.6
N3WET300	2.1	2.1	2.1	2.2	2.8	2.3	2.2	0.7	0.7	0.6	0.7	0.8	0.7	0.6
Paired Mean (SD) [1]	1.9 (0.3)	2.0 (0.6)	2.2 (0.3)	2.1 (0.2)	2.3 (0.4)	2.2 (0.3)	2.1 (0.1)	0.6 (0.1)	0.6 (0.2)	0.7 (0.1)	0.7 (0.1)	0.7 (0.1)	0.7 (0.1)	0.6 (0.1)
Total Mean (SD) [1]	2.0 (0.2)	1.9 (0.5)	2.1 (0.3)	2.0 (0.3)	2.2 (0.3)	2.1 (0.3)	2.1 (0.1)	0.7 (0.1)	0.6 (0.2)	0.7 (0.1)	0.6 (0.1)	0.7 (0.1)	0.7 (0.1)	0.6 (0.1)

[1] Standard deviation.

3.2 Cluster Analysis and Community Typing

Patterned fen wetland community types were identified on the RoW based on regenerating vegetation cover and composition. Analyses were performed for seven surveys on the RoW, resulting in two community types (Table 3-2), generally consistent since 2017. Though quite similar in species composition, the two communities have remained distinguished since initial sampling due to vegetation structure (i.e., presence of low shrubs), moss cover and composition, and the presence of surface water. Dwarf birch (*Betula pumila*) seedlings and tall shrubs have become identifiable in 2019 typing (similar to off-RoW). In 2017, one site did not group with others due to higher water levels (98%), which in turn resulted in very little emergent vegetation present.

Adjacent to the RoW, one wetland community type was identified during initial sampling for off-RoW comparison - Tamarack/Dwarf Birch/Hairy-fruited Sedge/Moss. This community type (two surveys) has a sparse canopy of tamarack (*Larix laricina*), characteristic of this wetland type. The tall shrub layer consists of three species that include tamarack, dwarf birch and black spruce (*Picea mariana*). Notably present in the ground layer were hairy-fruited sedge (*Carex lasiocarpa*), dwarf birch, Labrador tea (*Rhododendron groenlandicum*) and bog bean (*Menyanthes trifoliata*). Moss species cover was high (62%) in the ground layer; peat moss (*Sphagnum* spp.) cover was lower (17%). Ground litter cover was 15%.

Table 3-2. Community types for environmentally sensitive wetland surveys on the RoW.

Year	Community Types	Surveys	Species
2014	Bog Willow-Bog Bean/Moss	2	24
	Hairy-fruited Sedge/Moss	1	19
2015	Bog Willow-Bog Bean/Sphagnum	2	27
	Hairy-fruited Sedge- Bog Bean/Moss	5	48
2016	Bog Birch – Three-leaved Solomon's-seal/Sphagnum	3	44
	Hairy-fruited Sedge- Bog Bean	4	28
2017	Bog Bean – Hairy-fruited Sedge/moderate Mosses	3	42
	Low shrub – Bog Bean – Hairy-fruited Sedge/abundant Sphagnum - Mosses	3	40
	High water site	1	9
2018	Bog Bean – Hairy-fruited Sedge/moderate Mosses/Surface water	4	49
	Low shrub – Bog Bean – Hairy-fruited Sedge/abundant Sphagnum - Mosses	3	44
2019	Sparse Dwarf Birch seedlings - Flat-leaved Bladderwort/moderate Mosses (non-Sphagnum)/ Surface water	3	37
	Sparse Dwarf Birch Tall Shrub/Dwarf Birch seedlings - Labrador Tea-Three-leaved Solomon's-seal/abundant Mosses (Sphagnum and other)	4	47

3.3 Accuracy of Effect Predictions and Effectiveness of Mitigation

The effect predictions for the project were determined to be accurate, and included effects on environmentally sensitive sites and wetlands (Szwaluk Environmental Consulting et al. 2011). The effects on wetlands identified included potential disruption, alteration or loss from project activities; and species of conservation concern may also be affected.

Mitigation measures identified in the Construction Environmental Protection Plan (Manitoba Hydro 2014) were initially assessed after clearing, at each wetland site sampled. The majority of recommended mitigation measures were implemented (Table 3-3). Recommended mitigation was effective for the patterned fen wetlands which minimized the disturbance from clearing and construction activities. In the absence of mitigation, surface disturbance (i.e, rutting, exposed soils) likely would have increased.

Table 3-3. Mitigation measures assessed at sites monitored for environmentally sensitive wetlands on the RoW.

Mitigation Measure	N3WET1000	N3WET2000	N3WET3000	N4WET1000	N4WET2000	N4WET3000	N4WET4000
Use existing access roads and trails to the extent possible.	Y	Y	Y	Y	Y	Y	Y
Provide 30 m vegetated (shrub, herbaceous) buffer around site.	N	N	N	N	N	N	N
Remove trees by low disturbance methods.	Y	N	N	N	N	Y	Y
Confine vehicle traffic to established trails to extent possible.	Y	Y	Y	Y	Y	Y	Y
Carry out construction activities on frozen/dry ground to minimize surface damage, rutting and erosion.	Y	Y	Y	Y	Y	Y	Y
Install erosion protection/sediment control measures in accordance with Erosion/Sediment control plan.	-	-	-	-	-	-	-

During clearing and construction activities in 2014 and 2015, all sites appeared to utilize existing trails and had vehicle traffic confined to established trails, to the extent possible. Construction activities were carried out on frozen ground conditions to minimize surface damage, rutting and erosion. Vegetated buffers at the ends of the wetlands on the RoW were not fully retained.

Tree clearing was carried out using methods with low disturbance to wetlands for three monitoring sites (N3WET100; N4WET300; -400). Four sites showed moderate disturbance from shear blading and tree cover removal, with slash present and areas of organic soil exposed, over the first two seasons. Approximately 42 hectares were disturbed from clearing activities in 2014 while 15.2 hectares were calculated in 2015, a reduction of 26.8 hectares. In 2016, monitored wetlands showed lower disturbance from earlier years observations. Average surface water cover increased from 0.6% to 97% from the previous season in one site (N4WET300). During monitoring in 2017, the equipment path displayed light travel or minor rutting in areas of the RoW from construction activities. Natural regeneration showed increases throughout disturbed wetland sites.

In 2018, all towers were erected and conductor stringing was completed in wetlands sampled. During ground surveys, the wetlands showed relatively low disturbance from the recent project activities. Vehicle traffic appeared to utilize mainly existing trails under frozen ground conditions. Water levels in many areas of the RoW were observed to be higher than in previous years, possibly a result of increased winter snow melt or greater precipitation received during spring and early summer. Sampled wetlands observed with high water levels included N3WET200; -300 and N4WET400.

The seven wetland sites monitored showed relatively low disturbance in 2019. Water levels in sampled wetland plots continue to be variable over monitoring seasons. Three sites with previous high-water levels (2018) showed a reduction in percent surface water cover in 2019. A reduction in water levels could have been a result of lower precipitation received in the region. In 2018, total precipitation received in The Pas region from January through July was 339.9 mm, while in 2019, 212.7 mm was received over the same months (Government of Canada 2019). Patterned fen wetlands continue to recover with no evidence of disrupted natural function along the RoW.

Elsewhere on the RoW, generally low wetland disturbance was documented during aerial inspection of wetlands. Occasional areas of rutting through wetlands on the equipment path were observed, where natural revegetation was slow and exposed soil remained with tracks of water. Similarly, occasional tower foundations in wetlands showed evidence of previous construction activity. Remaining disturbances were however reduced in 2019 and areas previously affected were anticipated to naturally recover. No areas of wetland disturbance were identified for rehabilitation in 2019.

3.4 Species of Conservation Concern

In wetland monitoring sites, species of conservation concern were observed to persist after clearing and construction activities. Surveys occurred from 2014 through 2018. Among sites, nine species of conservation concern were observed in monitored wetlands. Species ranked imperiled (S2? to S2S4) were slender-leaved sundew (*Drosera linearis*, S2?) and floating marsh-marigold (*Caltha natans*, S2S4). Seven additional species ranked vulnerable (S3 to S3S5) were oblong-leaved sundew (*Drosera anglica*, S3S4), yellow twayblade (*Liparis loeselii*, S3S4), swamp-fly-honeysuckle (*Lonicera oblongifolia*, S3S5), bog candle (*Platanthera dilatata*, S3S4), white beakrush (*Rhynchospora alba*, S3), podgrass (*Scheuchzeria palustris*, S3S4) and lesser bladderwort (*Utricularia minor*, S3).

Two locations for species of conservation concern were not observed at monitoring sites during successive growing seasons (white beakrush and oblong-leaved sundew). Several new locations for species of conservation concern were observed incidentally in sites over the duration of monitoring (e.g., floating marsh-marigold; slender-leaved sundew; bog candle; white beakrush; oblong-leaved sundew). The monitoring success for species of conservation concern was attributed to general low disturbance in these environmentally sensitive wetlands.

4.0 CONCLUSION

Seven environmentally sensitive patterned fen wetlands were monitored during construction and post-construction. Although some wetland measures initially show differences between on and off-RoW, species richness values show an increasing trend on the RoW, similar to off-RoW values after six years of monitoring. Mean species cover values on the RoW are influenced by the removal of sparse woody vegetation during clearing. Measures of diversity and evenness show similar values between on and off-RoW across all years of monitoring.

The effects on wetlands included the predicted initial disruption and alteration from project activities, such as those from tree removal and equipment travel. The recommended mitigation was effective for the wetlands which minimized the disturbance from clearing and construction activities. Monitored wetlands continue to naturally recover with no evidence of disrupted wetland function along the RoW.

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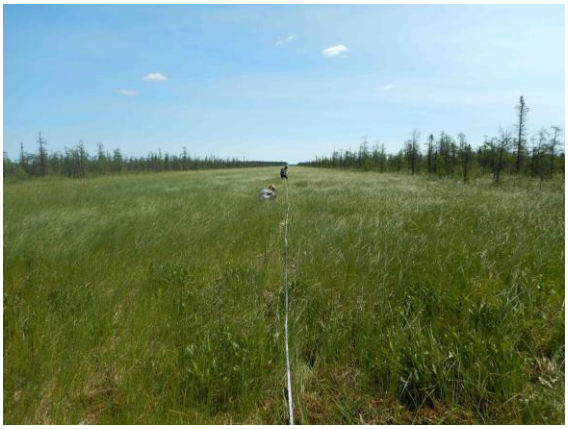
APPENDIX I. Photographs of environmentally sensitive wetlands monitored on the transmission line RoW from 2014 through 2019.

N3WET100 MONITORING

	
2014	2015
	
2016	2017
	
2018	2019

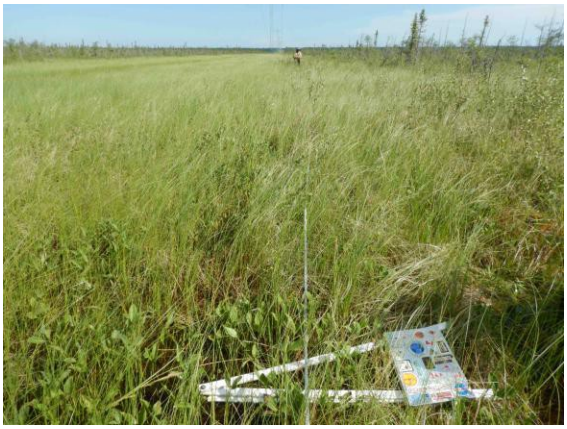
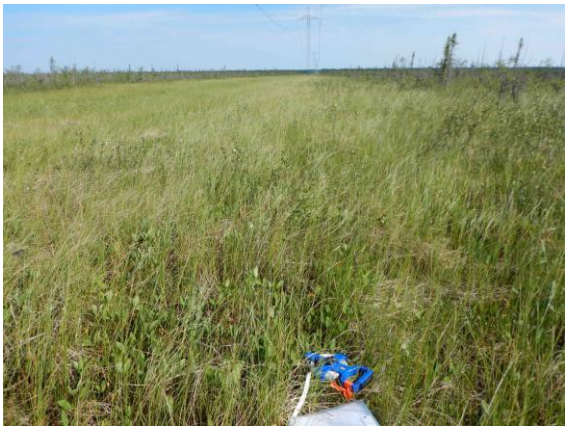
N3WET200 MONITORING

	
2014	2015
	
2016	2017
	
2018	2019

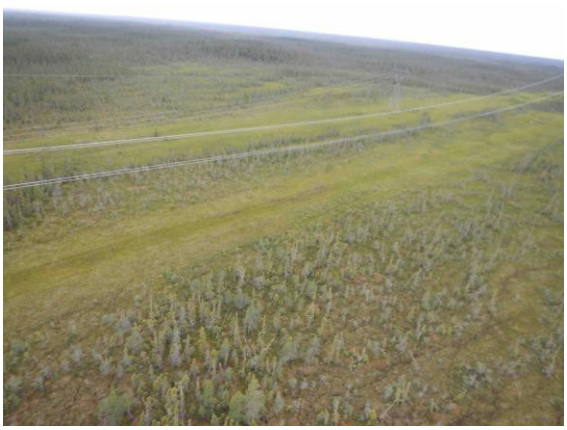
N3WET300 MONITORING

	
2014	2015
	
2016	2017
	
2018	2019

N4WET100 MONITORING

	
2015	2016
	
2017	2018
	
2019a	2019b

N4WET200 MONITORING

	
2015	2016
	
2017	2018
	
2019a	2019b

N4WET300 MONITORING

	
2015	2016
	
2017	2018
	
2019a	2019b

N4WET400 MONITORING

	
2015	2016
	
2017	2018
	
2019a	2019b

MANITOBA–MINNESOTA TRANSMISSION PROJECT

EFFECTS OF TRANSMISSION LINES ON WETLAND BIRDS

Prepared for

Manitoba Hydro

By

Wildlife Resource Consulting Services MB Inc.

April 2020

INTRODUCTION

The Manitoba-Minnesota Transmission Project consists of approximately 213 km of transmission line that will start at the existing Dorsey Converter Station northwest of Winnipeg and will connect at the Manitoba-Minnesota border (Manitoba Hydro 2019a). The project consists of two types of metal towers, guyed and self-supported, placed an average of 400 to 500 m apart in a right-of-way (ROW) approximately 80 to 100 m wide (Manitoba Hydro 2020). Towers will be connected by single circuit, 500 kV AC transmission line (Manitoba Hydro 2019a).

The main effects of transmission lines on wetland birds are associated with habitat changes and collisions with overhead wires. Some habitat has been lost at tower footprints and vegetation has been cleared on the ROW. The Manitoba-Minnesota Transmission Project was expected to affect a small amount (2%) of wetland habitat in the region (Manitoba Hydro 2015a). Changes in vegetation species abundance (Magnusson and Stewart 1987), the conversion of one type of wetland into another (e.g., wooded swamp to shrub swamp; Nickerson and Thibodeau 1986), and the maintenance of vegetation in early successional stages (Askins 1994) on transmission line ROWs can influence the bird species found within and nearby. Wetland birds such as cranes, ducks and geese can collide with transmission lines, resulting in mortality (e.g., Faanes 1987; Bevanger 1998; APLIC 2012; Rioux et al. 2013; Loss et al. 2014).

Compounds from chromated copper arsenate (CCA)-treated wooden utility poles (and potentially, other wood preservatives) can leach into wetlands (e.g., Warner and Solomon 1990) and areas with stagnant water (North American Wood Pole Council and Brooks 2020). Although no description of the effects of these compounds on wetland birds could be found in the literature, the use of steel lattice towers on this project negates the need for further investigation.

HABITAT EFFECTS

Limited literature is available on the effects of constructing and operating transmission lines on wetland bird habitat. Transmission lines can alter habitat by providing perch sites for brood parasites such as brown-headed cowbird (*Molothrus ater*), nest predators such as common raven (*Corvus corax*), and predators such as raptors (e.g., hawks and eagles). While transmission lines through forests increase the amount of edge habitat that attracts brown-headed cowbirds, effects on wetlands, which are typically open, are not as pronounced. However, the perches created by transmission lines could attract brown-headed cowbirds, possibly increasing brood parasitism and decreasing the productivity of affected songbird species (Evans and Gates 1997 in DeGregorio et al. 2014). There may or may not (Hauber and Russo 2000; DeGregorio et a. 2014; Bernaith-Plaisted et al. 2017) be a relationship between proximity to perches and brood parasitism, depending on the species being parasitized and the surrounding habitat. Transmission lines can provide perching and nesting sites for common ravens and red-tailed hawks (*Buteo jamaicensis*) (Knight and Kawashima 1993 in DeGregorio et al. 2014), which are protected under *The Wildlife Act* of Manitoba. However, the introduction of perching sites can result in increased raven and hawk predation on other birds and their nests. As the effects of transmission lines on the abundance of brown-headed cowbirds and raptors are described mainly for forest and grassland birds, the effects on wetland birds are unclear.

The effects of the construction of a transmission line on a shrub swamp, wooded swamp, and cattail (*Typha*) swamp were studied in Massachusetts (Nickerson and Thibodeau 1986). It was found that the shrub swamp returned to its former condition, the wooded swamp became a shrub swamp, and the cattail swamp was unaffected. Bird populations increased at the wooded and shrub swamps, likely due to the creation of edge habitat and of a travel corridor (Nickerson and Thibodeau 1986).

The spread of invasive plant species could potentially affect wetlands and reduce the quality and quantity of wetland bird habitat, primarily within, but potentially beyond the footprint of the ROW. The spread of invasive and native non-peatland plant species in bog and fen peatlands was studied along a transmission line ROW in Quebec (Dubé et al. 2011). The ROW was shown to facilitate the spread of native non-peatland and invasive plant species in fens. Minor effects were observed in bogs (Dubé et al. 2011). Measures to prevent the establishment of invasive plant species and to manage weeds were outlined in the Rehabilitation and Invasive Species Management Plan (Manitoba Hydro 2019b). Examples include avoiding walking or driving through areas of invasive species, cleaning and washing equipment and boots before entering and leaving a site, and recording early detection of invasive species problem areas on adjacent lands (Manitoba Hydro 2019b). During environmental monitoring for the Bipole III Transmission Project (Bipole III) it was determined that mitigation measures were effective where they were implemented, and no noxious, invasive, or non-native species had been found in environmentally sensitive wetlands (Szwaluk Environmental Consulting Ltd. And Newman 2018).

In Manitoba forested peatlands, changes in the abundances of plant species, rather than the alteration of plant community composition, were observed along transmission corridors from Gillam to Winnipeg (Magnusson and Stewart 1987). Other studies conducted in a range of habitats in the transmission corridors indicated that the vegetation communities along the ROW were different than those at nearby undisturbed sites and were typically at an earlier stage of succession, attributed to vegetation maintenance (MacLellan 1982; MacLellan and Stewart 1985).

More recently, environmental monitoring for Bipole III has shown no adverse effects of habitat loss on marsh birds. Minimal habitat loss was predicted, as the route was chosen to avoid wetlands and waterbodies where possible (Manitoba Hydro 2011). The abundance of marsh birds was lower after vegetation clearing on the ROW than before (Amec FosterWheeler Environment & Infrastructure 2017). However, a decline in marsh bird abundance was observed at impact sites expected to be affected by the transmission line and at unaffected control sites; a wide-ranging declining trend in the abundance of marsh birds was identified. Vegetation clearing on the ROW did not appear to affect marsh bird abundance adjacent to the transmission corridor. The abundance of wetland/open water songbirds was unchanged at control sites but increased at impact sites, indicating a potential increase in habitat at the latter sites due to an increase in beaver ponds and/or open flooded areas in the transmission corridor. Bird species richness was not affected by vegetation clearing on the ROW (Amec Foster Wheeler Environment & Infrastructure 2017).

COLLISION MORTALITY

Collisions with transmission lines result in bird mortality. The species most frequently affected are relatively large and with low maneuverability including waterfowl (ducks and geese), pelicans, and herons (e.g., Faanes 1987; Huckabee 1993 in Manville 2005; Bevanger 1998; APLIC 2012; Loss et al. 2014). Gulls are also susceptible to collisions because of their flocking behaviour and their tendency to feed at night (APLIC 2012). All are frequently found in wetlands. Passerines (perching birds) and raptors are more likely to collide with transmission lines in habitats other than wetlands (Manville 2005).

Many bird collisions occur at transmission lines near wetlands that support large numbers of waterbirds (Faanes 1987; Bernardino et al. 2018). Effects can be mitigated by route planning (D'Amico et al. 2018 in Bernardino et al. 2018) to avoid wetlands and by installing bird diverters on transmission lines near wetlands and waterbodies (e.g., APLIC 2012; Barrientos et al. 2012). In Manitoba, the Bipole III (Manitoba Hydro 2011), Keeyask (Manitoba Hydro 2012), Manitoba-Minnesota (Manitoba Hydro 2015b), and Birtle (Manitoba Hydro 2018) transmission projects have included a route selection process that considered environmental priorities, including wetlands, as factors in the determination of the suitability of transmission line locations. Bird diverters were placed on static wires at environmentally sensitive sites (primarily wetlands and stream crossings) to mitigate the potential effects of bird collisions.

Collision monitoring has been conducted at recently constructed transmission lines in northern Manitoba. Monitoring at stream crossings for the Keeyask Transmission Project in 2016 indicated that Canada goose (*Branta candensis*), an unidentified gull species, common raven (*Corvus corax*), Canada jay (*Perisoreus canadensis*), savannah sparrow (*Passerculus sandwichensis*), and an unidentified sparrow species mortality had occurred (Wildlife Resource Consulting Services MB Inc. [WRCS] 2017). The minimum collision mortality at stream crossings was estimated at 10.80 birds/km of transmission line in the late breeding bird season and at 10.32 birds/km during the fall migration. Collision monitoring was conducted for the Wuskwatim Generation Project from 2016 to 2018. Sites along a relatively short transmission line spanning open gravel areas with little vegetation regrowth were searched for evidence of bird mortality. Eight incidences of mortality were found in total: unidentified waterfowl, unidentified gull, common raven, four mallards (*Anas platyrhynchos*), and unidentified woodpecker (WRCS 2019). Despite the dry habitat on the transmission line ROW most mortalities were waterbirds, possibly because of the proximity of the transmission line to the Burntwood River. Collision mortality was estimated at 5.04 to 43.10 birds/km of transmission line during two breeding bird seasons and at 21.55 to 46.01 birds/km during two fall migration periods, which is within the range reported by other studies (WRCS 2019).

Collison monitoring was conducted for Bipole III from central to southern Manitoba in 2018 (Wood Environment & Infrastructure Solutions [Wood] 2019). Twenty-seven incidences of mortality were found in total at 14 of the 29 sites surveyed and 18 bird species were identified. Nine specimens were not identified to species. Of these, three were identified to group (sparrow, waterfowl, gull). Fourteen of the 27 (52%) collisions were passerine species, five (19%) were waterfowl species, and one (4%) was a gull. Two gamebird collisions (7%) were recorded and the remaining five

(19%) were unknown. Of the 29 sites surveyed, six were near wetlands. Mortalities were recorded at three wetland sites, including two where bird diverters were installed. Collision mortality was estimated at 56.21 birds/km of transmission line during the spring migration and at 35.66 birds/km during the fall migration.

More passerine mortality was found than expected during collision monitoring for Bipole III but was reported as similar to passerine mortality at the Manitoba-Minnesota and Keeyask transmission projects (Wood 2019). The relatively large number of passerine collisions could be due, at least in part, to the proportion of sites that were in terrestrial, rather than near riparian, habitat. While the habitats surveyed were unspecified, it could also be because smaller bird carcasses may be easier to detect in habitats such as grasses (Martin 2018).

CONCLUSION

The effects of transmission lines on wetland birds are mainly associated with marginal habitat changes such as physical habitat loss around the footprint of the tower, an incremental increase of perches for brown-headed cowbirds on wires and towers, increased perches and potential nesting habitat on structures for predators (e.g., hawks, ravens) for a limited number of towers spanning a wetland, and potential collisions with overhead wires. Measurably substantive effects are unlikely to bird populations associated with wetlands, with the possible exception of bird-wire collisions. No effects on bird diversity were observed during monitoring studies for the Bipole III Transmission Project, including no change to brown-headed cowbird abundance or birds of prey abundance. Collision mortality on Manitoba transmission lines was similar to that observed during other studies. These effects were mitigated by selecting a route that avoids wetlands, with practices that minimize the spread of invasive species, and by installing bird diverters on static wires at wetland sites to reduce bird collisions.

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Appendix D Part 2: Summary of Consultation to Date with Relevant Non-Government Expert Bodies

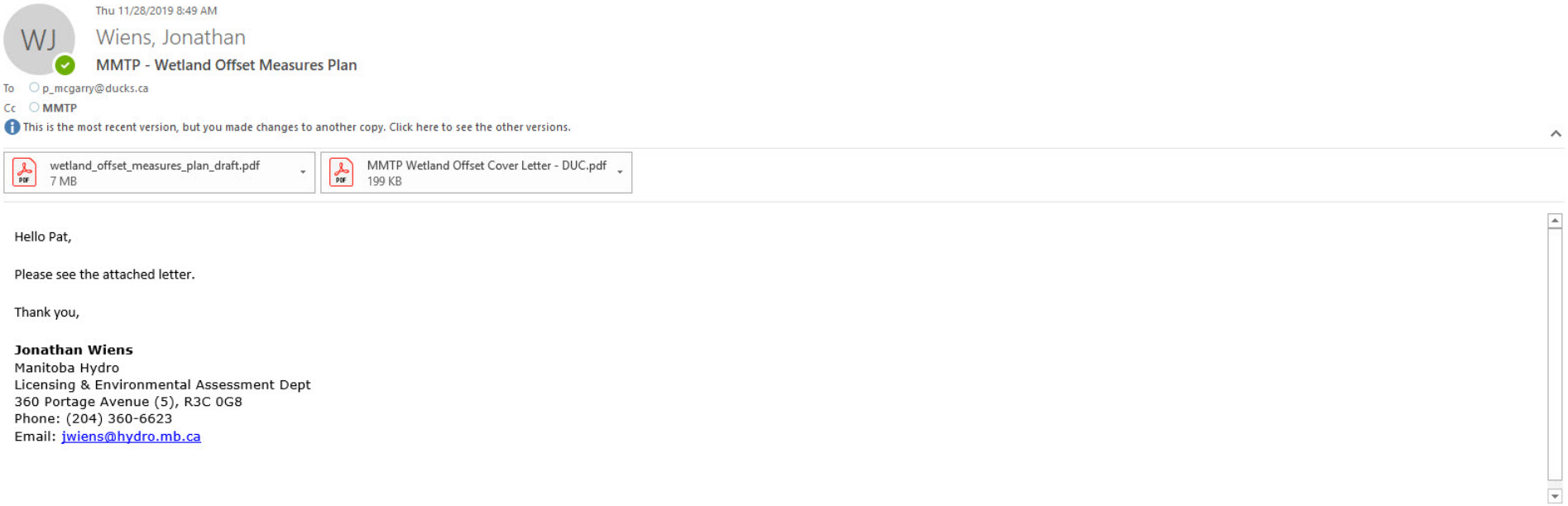
Manitoba Hydro consulted with relevant non-government expert bodies regarding the plan.

Contact and Title	Agency	Emailed	Called	Response Received	Response Provided
Pat McGarry - Head, Industry and Government Relations, Manitoba	Ducks Unlimited Canada	November 28, 2019	November 29, 2019; January 21, 2020	January 17, 2020	July 22nd, 2020
Stephen Carlyle - Chief Operating Officer	Manitoba Habitat Heritage Corporation	November 28, 2019; January 28 2020	November 29, 2019; December 3 2019	February 23, 2020	July 22nd, 2020
Carey Hamel - Director of Conservation	Nature Conservancy of Canada	November 28, 2019; January 28 2020	November 29, 2019	January 30, 2020	Not required

Summary of issues or concerns provided by relevant non-government bodies and Manitoba Hydro's response

Issues or Concerns Provided	How Manitoba Hydro Addressed or Responded to Issues or Concerns Raised
Ducks Unlimited Canada indicated that the plan applied the wetland mitigation hierarchy appropriately, appeared to match new Provincial wetland regulations, provided some wetland protection from future development, but could still cause wetland function concerns due to waterfowl striking the transmission line. Ducks Unlimited Canada recommended three actions: 1) consider bird strikes as loss of wetland function 2) construct the Project under frozen ground in wetland areas, 3) restrict maintenance activities in class 3,4,5 wetlands during the waterfowl breeding season.	Manitoba Hydro provided a written response to Ducks Unlimited Canada on July 22nd, 2020. This written response addressed the recommendations provided by Ducks Unlimited Canada by directing them to other environmental mitigation measures contained in the construction environmental protection plan, environmental impact statement, and commitment table. Addressing the recommendations from Ducks Unlimited Canada did not require altering the Wetland Offset Measures Plan.
Manitoba Habitat Heritage Corporation provide a written email response. In the response MHHC indicated that in their opinion the wetland plan should cover a broader wetland area and consider a higher compensation ratio then was outlined.	Manitoba Hydro provided a written response to Manitoba Habitat Heritage Corporation on July 22nd, 2020. This written response addressed the comments and recommendations by outlining how the wetland offset plan followed the requirements of Provincial legislation. They were also directed to the other wetland mitigation measures contained in the construction environmental protection and wetland offset measures plan. Addressing the comments and recommendations from Manitoba Habitat Heritage Corporation did not require altering the Wetland Offset Measures Plan.
Nature Conservancy Canada notified Manitoba Hydro that they would not be conveying a review of this plan.	None required.

Initial correspondence submitted to relevant non-government expert bodies:



Thu 11/28/2019 8:49 AM

WJ

Wiens, Jonathan

MMTP - Wetland Offset Measures Plan

To p_mcgarry@ducks.ca

Cc **MMTP**

This is the most recent version, but you made changes to another copy. Click here to see the other versions.

wetland_offset_measures_plan_draft.pdf
7 MB

MMTP Wetland Offset Cover Letter - DUC.pdf
199 KB

Hello Pat,

Please see the attached letter.

Thank you,

Jonathan Wiens
Manitoba Hydro
Licensing & Environmental Assessment Dept
360 Portage Avenue (5), R3C 0G8
Phone: (204) 360-6623
Email: jwiens@hydro.mb.ca

Manitoba Hydro
5-360 Portage Avenue • Winnipeg, Manitoba Canada • R3C 0G8

November 27th, 2019

Pat McGarry
Head Industry and Government Relations
Ducks Unlimited Canada
Stonewall, Manitoba
p_mcgarry@ducks.ca

Dear Mr. McGarry:

RE: Manitoba-Minnesota Transmission Project– Wetland Offset Measures Plan

Pursuant to Manitoba-Minnesota Transmission Project National Energy Board Certificate of Public Convenience and Necessity EC-059 condition 26, Manitoba Hydro is seeking feedback from your agency on the attached draft Wetland Offset Measures Plan.

The Plan can be accessed electronically at this link:
https://www.hydro.mb.ca/projects/mb_mn_transmission/pdfs/wetland_offset_measures_plan_draft.pdf

This document outlines Manitoba Hydro's plan for offsets for permanent wetland losses with the goal of no net loss of wetlands as a result of the project. This Plan follows the requirements dictated under the Province of Manitoba's *The Water Rights Act* and Water Rights Regulation. Manitoba Hydro is seeking input from provincial and federal authorities, non-government expert bodies and impacted Indigenous communities.

Please provide any feedback on this plan by January 17th, 2020.

For your reference, federal certificate condition 26 and provincial licence condition 36 state:

26. Wetland Offset Measures Plan
Manitoba Hydro must file with the Board for approval, ***within ninety (90) days of commencing operation of the Project****, a Wetland Offset Measures Plan which outlines how permanent loss to wetlands resulting from the Project will be offset or compensated for. This plan must include:*

a) a description of site-specific details and maps showing the locations of permanent wetland loss as a result of Project activities at Dorsey Converter Station and the transmission tower locations, as well as any other locations where wetlands were affected by the Project;

b) an explanation of how wetland function will be measured during the post-construction monitoring program, and any resulting accidental permanent loss to wetlands quantified and reported to the Board as part of Condition 23;

c) a list of the offset or compensation measures that will be implemented to address permanent loss of wetlands as identified in a) and b) above;
d) an explanation of the expected effectiveness of each offset measure described in c) and the relative value of each offset measure towards achieving the offset;
e) the decision-making criteria for selecting specific offset measures and offset ratios that would be used under what circumstances;
f) a schedule indicating when measures will be implemented and estimated completion date(s);
g) evidence and summary of consultation with provincial and federal authorities, any non-governmental expert bodies, and any impacted Indigenous communities regarding the plan; and,
h) this summary must include a description of any issues or concerns raised regarding the plan by Indigenous communities, and how Manitoba Hydro has addressed or responded to them.

For your reference, the Provincial authorization for the Project under *The Environment Act* (licence #3288) includes condition 36:

Wetlands
36. The Licencee shall, within three months of the completion of construction of the Development, submit a plan for approval of the Director of the Environmental Approvals Branch to ensure that there is no net loss of wetland benefits related to Class 3, 4, and 5 wetlands (as defined by the Stewart & Kantrud Classification System) that are altered or destroyed during construction of the Development.

Should you have any questions or wish to discuss, please do not hesitate to contact me at 204-360-6623 (jwiens@hydro.mb.ca) or Maggie Bratland 204-360-7677 (mbratland@hydro.mb.ca). If you will not be reviewing and providing feedback on the document, we ask that you please inform us.

Regards,

Original signed by

Jonathan Wiens
Licensing and Environmental Assessment Department
Manitoba Hydro
360 Portage Ave (5)
Winnipeg, Manitoba
R3C 0G8

Attachment: 1

Thu 11/28/2019 8:48 AM

WJ

Wiens, Jonathan

MMTP - Wetland Offset Measures Plan

To scarlyle@mhhc.mb.ca

Cc **MMTP**

You replied to this message on 1/28/2020 10:53 AM.

wetland_offset_measures_plan_draft.pdf
7 MB

MMTP Wetland Offset Cover Letter - MHHC.pdf
197 KB

Hello Stephen,

Please see the attached letter.

Thanks you,

Jonathan Wiens
Manitoba Hydro
Licensing & Environmental Assessment Dept
360 Portage Avenue (5), R3C 0G8
Phone: (204) 360-6623
Email: jwiens@hydro.mb.ca

Manitoba Hydro
5-360 Portage Avenue • Winnipeg, Manitoba Canada • R3C 0G8

November 27th, 2019

Stephen Carlyle
Chief Operating Officer
Manitoba Habitat Heritage Corporation
200-1765 Sargent Ave
Winnipeg, MB R3H 0C6

Dear Mr. Carlyle:

RE: Manitoba-Minnesota Transmission Project– Wetland Offset Measures Plan

Pursuant to Manitoba-Minnesota Transmission Project National Energy Board Certificate of Public Convenience and Necessity EC-059 condition 26, Manitoba Hydro is seeking feedback from your agency on the attached draft Wetland Offset Measures Plan.

The Plan can be accessed electronically at this link:
https://www.hydro.mb.ca/projects/mb_mn_transmission/pdfs/wetland_offset_measures_plan_draft.pdf

This document outlines Manitoba Hydro's plan for offsets for permanent wetland losses with the goal of no net loss of wetlands as a result of the project. This Plan follows the requirements dictated under the Province of Manitoba's *The Water Rights Act* and Water Rights Regulation. Manitoba Hydro is seeking input from provincial and federal authorities, non-government expert bodies and impacted Indigenous communities.

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For your reference, federal certificate condition 26 and provincial licence condition 36 state:

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g) evidence and summary of consultation with provincial and federal authorities, any non-governmental expert bodies, and any impacted Indigenous communities regarding the plan; and,
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Should you have any questions or wish to discuss, please do not hesitate to contact me at 204-360-6623 (jwiens@hydro.mb.ca) or Maggie Bratland 204-360-7677 (mbratland@hydro.mb.ca). If you will not be reviewing and providing feedback on the document, we ask that you please inform us.

Regards,

Original signed by

Jonathan Wiens
Licensing and Environmental Assessment Department
Manitoba Hydro
360 Portage Ave (5)
Winnipeg, Manitoba
R3C 0G8

Attachment: 1

Thu 11/28/2019 8:45 AM

WJ

Wiens, Jonathan

MMTP - Wetland Offset Measures Plan

To Cary.Hamel@natureconservancy.ca

Cc **MMTP**

This is the most recent version, but you made changes to another copy. Click here to see the other versions.
You replied to this message on 1/28/2020 10:54 AM.

MMTP Wetland Offset Cover Letter - NCC.pdf
197 KB

wetland_offset_measures_plan_draft.pdf
7 MB

Hi Carey,

Please see the attached letter.

Thank you,

Jonathan Wiens
Manitoba Hydro
Licensing & Environmental Assessment Dept
360 Portage Avenue (5), R3C 0G8
Phone: (204) 360-6623
Email: jwiens@hydro.mb.ca

Manitoba Hydro
5-360 Portage Avenue • Winnipeg, Manitoba Canada • R3C 0G8

November 27th, 2019

Cary Hamel
Conservation Science Manager
Manitoba Region
Nature Conservancy of Canada
Cary.Hamel@natureconservancy.ca

Dear Mr. Hamel:

RE: Manitoba-Minnesota Transmission Project– Wetland Offset Measures Plan

Pursuant to Manitoba-Minnesota Transmission Project National Energy Board Certificate of Public Convenience and Necessity EC-059 condition 26, Manitoba Hydro is seeking feedback from your agency on the attached draft Wetland Offset Measures Plan.

The Plan can be accessed electronically at this link:
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This document outlines Manitoba Hydro's plan for offsets for permanent wetland losses with the goal of no net loss of wetlands as a result of the project. This Plan follows the requirements dictated under the Province of Manitoba's *The Water Rights Act* and Water Rights Regulation. Manitoba Hydro is seeking input from provincial and federal authorities, non-government expert bodies and impacted Indigenous communities.

Please provide any feedback on this plan by January 17th, 2020.

For your reference, federal certificate condition 26 and provincial licence condition 36 state:

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a) a description of site-specific details and maps showing the locations of permanent wetland loss as a result of Project activities at Dorsey Converter Station and the transmission tower locations, as well as any other locations where wetlands were affected by the Project;

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Should you have any questions or wish to discuss, please do not hesitate to contact me at 204-360-6623 (jwiens@hydro.mb.ca) or Maggie Bratland 204-360-7677 (mbratland@hydro.mb.ca). If you will not be reviewing and providing feedback on the document, we ask that you please inform us.

Regards,

Original signed by

Jonathan Wiens
Licensing and Environmental Assessment Department
Manitoba Hydro
360 Portage Ave (5)
Winnipeg, Manitoba
R3C 0G8

Attachment: 1

Response from relevant non-government expert bodies:

Conserving Canada's Wetlands

January 16, 2019

Mr. J. Wiens
Licensing and Environmental Assessment Department
Manitoba Hydro
360 Portage Avenue
Winnipeg, Manitoba R3C 0G8

Dear Mr. Wiens,

Re: Draft Manitoba-Minnesota Transmission Project (MMTP) Wetland Offset Measures Plan

Thanks for the invitation and opportunity to review the above document. We are pleased to see that you are following generally accepted wetland mitigation and offset protocols starting with the Mitigation Hierarchy. Transmission line routing is a key in avoidance and minimization and seems to have been applied well for this project.

What remains after that exercise is unavoidable wetland loss or alteration that requires compensation or offset to effectively meet the no-net-loss of wetland benefits goal of the recently enacted *Sustainable Watersheds Act* (June 2018) with amendments to the *Water Rights Act* and *Water Rights Regulation*. Your basis for compensation of permanent wetland loss is the footprint of anchors for each tower type (27.45 m^2 for self-supporting towers and 36.4 m^2 for guyed structures). While the structure footprint identified, minimally covers the physical wetland loss, it does not cover all the wetland functions and benefits associated with that loss, especially for Class 3, 4 and 5 wetlands that have waterfowl habitat associated with them. The presence of the structures and the overhead transmission lines present a hazard and obstacle to breeding and migrating waterfowl and other birds. This effect might be considered one of alteration resulting in partial loss of wetland benefits.

The Environmental Impact Assessment (EIA) for the project reviewed the potential effects of transmission line on birds and concluded that mitigation was required to lessen potential for bird strikes by installing bird deflectors in important bird areas. This is a reasonable mitigation especially for waterfowl that are heavy bodied and have limited avoidance capability in comparison to more agile flyers. A reference included in the MMTP EIA indicated that “most bird collisions occur within 400m of water” (Faanes 1987). As such, bird diverters should be considered on the transmission line for Class 3, 4 and 5 wetlands within that distance of the transmission line right-of-way (ROW).

In conclusion the draft wetland offset plan:

- Applies the mitigation hierarchy appropriately;
- Uses mitigation ratios and compensation amounts for your defined wetland loss that appear to meet or exceed the requirements of the recently proclaimed *Water Rights Regulation* (M.R. 130/2019);
- Does by default somewhat protect wetland benefits on the ROW, by removing that area from future land development, once maintenance and access activities are accounted for;
- However, the ROW does not protect all aspects of wetland function and still exposes waterfowl to transmission line strikes in proximity to Class 3, 4 and 5 wetlands.

Ducks Unlimited Canada recommends Manitoba Hydro consider:

- Expanding the scope of wetland alteration or loss to include the potential for bird strikes in proximity to Class 3, 4 and 5 wetlands and mitigating as suggested above;
- Constructing the transmission line across wetlands on frozen ground to minimize wetland habitat disturbance;
- Restricting maintenance activities in Class 3, 4 and 5 wetlands during migratory bird breeding season.

Thanks again for the opportunity to review and comment on the draft Wetland Offset Measures Plan. If you wish to discuss further, please contact me.

Best regards,

Patrick McGarry
Head, Industry & Government Relations - Manitoba
Ducks Unlimited Canada

From: Stephen Cardyle
To: Wiens, Jonathan
Subject: Re: MMTP - Wetland Offset Measures Plan
Date: Monday, February 3, 2020 5:07:41 PM

Hey Jonathan,
All is well, just got swamped and I am now on the road (currently in the St. Louis airport). In terms of a response from MHHC, I can keep it very simple, as follows, if that will suffice.
MHHC applauds MB Hydro for their work to consult a variety of agencies with respect to the Manitoba-Minnesota transmission line. As a leading conservation group in Manitoba, and an organization that has worked on mitigation for several linear disturbances, it is our opinion that the proposed mitigation calculation is erroneous in that it does not account for the full impact of the line and towers. It is our recommendation to include in the calculation of the area disturbed, the entire right of way. Identifying only the concrete piles/footings as the only lost habitat does not fully address long term losses. MHHC recommends that all the ROW be included, but at a lower "impact" level.
All wetland habitat within the tower footprints should be compensated at a 4:1 ratio with wetland habitat in the ROW at a 2:1 (i.e. 50%) ratio.
Thanks for your consideration of this recommendation and we would be willing to explore these calculations further in the future.
Thanks,
Stephen

Get Outlook for Android

From: Cary Hamel
To: Wiens, Jonathan
Cc: MMTP, Rebekah Neufeld
Subject: RE: MMTP - Wetland Offset Measures Plan
Date: Thursday, January 30, 2020 8:34:27 AM

Hi Jonathan – NCC won't be conveying a review of this.

Regards

Cary

Cary Hamel
Director of Conservation
Nature Conservancy of Canada | Manitoba Region
cary.hamel@natureconservancy.ca | www.natureconservancy.ca

NCC staff published several research papers in 2019 on some of Manitoba's most important conservation opportunities: http://www.natureconservancy.ca/en/where-we-work/manitoba/stories/celebrating-a-great-2019.html

Response to relevant non-government expert bodies:

Manitoba Hydro
5-360 Portage Avenue • Winnipeg, Manitoba Canada • R3C 0G8

July 22nd, 2020

Pat McGarry
Head Industry and Government Relations
Ducks Unlimited Canada
Stonewall, Manitoba

Dear Mr. McGarry:

RE: Manitoba-Minnesota Transmission Project– Draft Wetland Offset Measures Plan and No Net Loss of Wetlands Plan

Thank you for your letter dated January 16th, 2020. We appreciate your comments on the Manitoba-Minnesota Transmission Project – Draft Wetland Offset Measures Plan and No Net Loss of Wetlands Plan. While Manitoba Hydro has not altered the Plan based on your recommendations, we have provided further information that hopefully addresses your concerns. These responses help explain the Project's broader commitment to wetland protection.

1. Expanding the scope of wetland alteration or loss to include the potential for bird strikes in proximity to Class 3, 4 and 5 wetlands and mitigating as suggested above;

Manitoba Hydro values this recommendation and notes it has already committed to installing bird diverters in areas identified as being higher risk for bird wire collisions. Please see Construction Environmental Protection Plan (https://www.hydro.mb.ca/projects/mb_mn_transmission/pdfs/epp_construction_environmental_protection_plan.pdf) and Construction Environmental Protection Plan Mapbook (https://www.hydro.mb.ca/projects/mb_mn_transmission/pdfs/epp_construction_environmental_protection_plan_mapbook.pdf) for more details including specific locations where bird diverters have been prescribed. Bird movement surveys and proximity to wetlands were an important consideration in this process.

2. Constructing the transmission line across wetlands on frozen ground to minimize wetland habitat disturbance;

Manitoba Hydro has committed to specific mitigation measures regarding wetlands, including the commitment that "Disturbance of wetlands will only be carried out under frozen ground conditions. If frozen ground conditions do not exist alternate mitigation measures such as construction matting may be used to minimize surface damage, rutting and erosion if approved by MH environmental Officer/Inspector." Further details can be found in the Construction Environmental Protection Plan (https://www.hydro.mb.ca/projects/mb_mn_transmission/pdfs/epp_construction_environmental_protection_plan.pdf).

3. Restricting maintenance activities in Class 3, 4 and 5 wetlands during migratory bird breeding season.

Manitoba Hydro has committed to wetland protection and mitigation measures during

operations of the Project as described in Chapters 8, 9 and 10 of the Environmental Impact Statement. These commitments are available for review in our Manitoba-Minnesota Transmission Project (MMTP) Commitment Tracking Table (https://www.hydro.mb.ca/projects/mb_mn_transmission/pdfs/commitment_tracking.pdf).

Thank you again for your comments and we hope these responses address your recommendations. We expect to release a final Plan in the coming weeks.

Regards,

Original signed by

Jonathan Wiens
Licensing and Environmental Assessment Department
Manitoba Hydro
360 Portage Ave (5)
Winnipeg, Manitoba
R3C 0G8

Manitoba Hydro

5-360 Portage Avenue • Winnipeg, Manitoba Canada • R3C 0G8

July 22nd, 2020

Stephen Carlyle
Chief Operating Officer
Manitoba Habitat Heritage Corporation
200-1765 Sargent Ave.
Winnipeg, MB R3H 0C6

Dear Mr. Carlyle:

RE: Manitoba-Minnesota Transmission Project– Draft Wetland Offset Measures Plan and No Net Loss of Wetlands Plan

Thank you for your email dated February 4th, 2020. We appreciate your comments on the Manitoba-Minnesota Transmission Project – Draft Wetland Offset Measures Plan and No Net Loss of Wetlands Plan (the Plan). While Manitoba Hydro has not altered the Plan based on your recommendations, we have provided further information that hopefully addresses your concerns. These responses help explain the Project's broader commitment to wetland protection.

1. "it is our opinion that the proposed mitigation calculation is erroneous in that it does not account for the full impact of the line and towers";

Manitoba Hydro respects this opinion and notes that it developed the Plan to best align with the requirements dictated under the Province of Manitoba's recently updated *The Water Rights Act* and Water Rights Regulation. The offsets will be implemented to address permanent loss of wetlands as a result of the Project. We acknowledge that other wetland impacts may be realized and therefore additional wetland mitigation measures are outlined in the Plan and the MMTP environmental protection plan documents. Please see table 1 of the Plan for an overview of these measures. In addition, we also note that this Plan generally aligns with or exceeds the requirements of developers in the nearby Province of Alberta, as outlined in their "*Code of Practice for Powerline Works Impacting Wetlands*".

2. It is our recommendation to include in the calculation of the area disturbed, the entire right of way. Identifying only the concrete piles/footings as the only lost habitat does not fully address long term losses. MHHC recommends that all the ROW be included, but at a lower "impact" level. All wetland habitat within the tower footprints should be compensated at a 4:1 ratio with wetland habitat in the ROW at a 2:1 (i.e. 50%) ratio.;

Manitoba Hydro has committed to wetland mitigation measures across the entire Project right-of-way, including the commitment that "Disturbance of wetlands will only be carried out under frozen ground conditions. If frozen ground conditions do not exist alternate mitigation measures such as construction matting may be used to minimize surface damage, rutting and erosion if approved by Manitoba Hydro environmental Officer/Inspector." Further details can be found in the Construction Environmental Protection Plan

https://www.hydro.mb.ca/projects/mb_mn_transmission/pdfs/epp_construction_environmental_protection_plan.pdf).

The wetland habitat offset ratio outlined in this plan follows the requirements dictated under the Province of Manitoba's recently updated *The Water Rights Act* and Water Rights Regulation.

Manitoba Hydro has also developed a MMTP Rehabilitation and Invasive Species Management Plan and a MMTP Environmental Monitoring Plan to examine the effectiveness of these mitigation measures. Manitoba Hydro will also offset for wetlands that are permanently lost due to accidental or unforeseen events. This will be calculated at the end of construction.

Thank you again for your comments and we hope these responses address your concerns. We expect to release a final draft of the Plan in the coming weeks.

Regards,

Original signed by

Jonathan Wiens
Licensing and Environmental Assessment Department
Manitoba Hydro
360 Portage Ave (5)
Winnipeg, Manitoba
R3C 0G8

Appendix E: Diagram of Permanent Wetland Loss

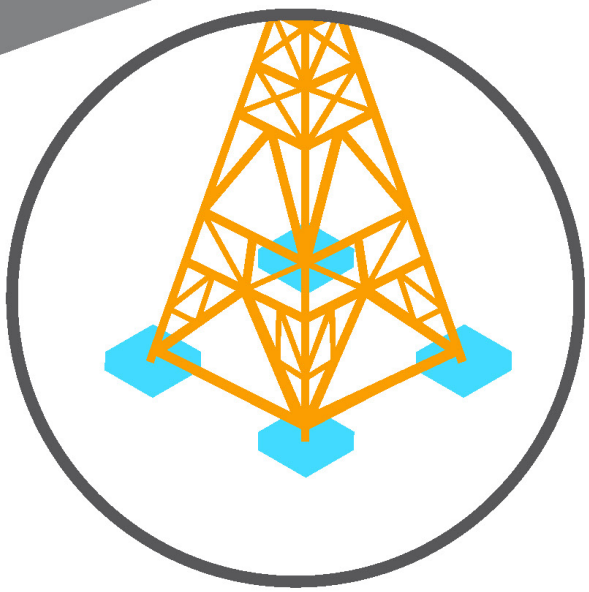
MANITOBA-MINNESOTA TRANSMISSION PROJECT

Permanent loss

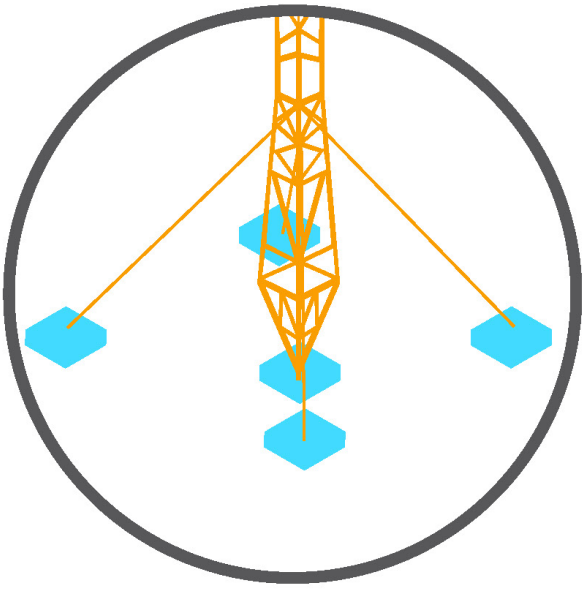
Area of loss dependant on individual tower

WETLANDS

Permanent loss of wetlands



Self-supporting structure



Guyed structure