Manitoba Hydro

PO Box 7950 Stn Main • Winnipeg, Manitoba Canada • R3C 0J1
(204) 360-4394 • sjohnson@hydro.mb.ca

July 11th, 2012

Ms. Cathy Johnson
Secretary, Clean Environment Commission
305-155 Carlton St.
Winnipeg, MB R3C 3H8

Ms. Johnson

RE: Bipole III Transmission Project – Response Package #2

Please find enclosed responses to various Information Requests which were submitted to Manitoba Hydro on May 29th, June 7th, June 15th and June 22nd, respectively. Note that our previous response related to caribou submitted on May 18th 2012, is to be considered as *Response Package #1*.

Please see the attached table for a complete listing of the responses enclosed.

We trust the enclosed responds appropriately to your requests. Should you have any questions or require further clarification of our comments and information requests please do not hesitate to contact us.

Regards,

Original Signed by Shannon Johnson

Shannon Johnson
Manager Licensing and Environmental Assessment Department
820 Taylor Ave (3)
Winnipeg, Manitoba
R3M 3T1

sj/tk

Enclosed:

CEC Information Request #	**Information Request #2**	**Information Request #3**	**Information Request #4**	**Information Request #5**
Date Received	**May 29th**	**June 7th**	**June 15th**	**June 22nd**
MH Response Label	**CEC/MH-II-**	**CEC/MH-III-**	**CEC/MH-IV-**	**CEC/MH-V-**
	CEC/MH-II-001b	CEC/MH-III-027	CEC/MH-IV-132	CEC/MH-V-151
	CEC/MH-II-001d	CEC/MH-III-028	CEC/MH-IV-134	CEC/MH-V-152
	CEC/MH-II-001i	CEC/MH-III-029	CEC/MH-IV-144	CEC/MH-V-157
	CEC/MH-II-001j	CEC/MH-III-030	CEC/MH-IV-145	CEC/MH-V-159
	CEC/MH-II-002a	CEC/MH-III-031	CEC/MH-IV-146	CEC/MH-V-160
	CEC/MH-II-002c	CEC/MH-III-034	CEC/MH-IV-147	CEC/MH-V-161
	CEC/MH-II-002d	CEC/MH-III-035		CEC/MH-V-162
	CEC/MH-II-002e	CEC/MH-III-039		CEC/MH-V-163
	CEC/MH-II-002f	CEC/MH-III-041		CEC/MH-V-164
	CEC/MH-II-002h	CEC/MH-III-043a		CEC/MH-V-172a
	CEC/MH-II-002i	CEC/MH-III-043b		CEC/MH-V-172b
	CEC/MH-II-002jk	CEC/MH-III-046		CEC/MH-V-172c
	CEC/MH-II-003d	CEC/MH-III-047		
	CEC/MH-II-006gi	CEC/MH-III-051		
	CEC/MH-II-007k	CEC/MH-III-052		
	CEC/MH-II-007m	CEC/MH-III-053a		
	CEC/MH-II-008a	CEC/MH-III-053b		
	CEC/MH-II-010d	CEC/MH-III-053c		
	CEC/MH-II-010f	CEC/MH-III-053d		
	CEC/MH-II-012			
	CEC/MH-II-016a	CEC/MH-III-054a		
	CEC/MH-II-018a	CEC/MH-III-054b		
	CEC/MH-II-018b	CEC/MH-III-054c		
	CEC/MH-II-020b	CEC/MH-III-054d		
	CEC/MH-II-023	CEC/MH-III-054e		
	CEC/MH-II-025	CEC/MH-III-057		
		CEC/MH-III-060		
		CEC/MH-III-067		
		CEC/MH-III-068		
		CEC/MH-III-069		

CEC Information Request #	Information Request #2	Information Request #3	Information Request #4	Information Request #5
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		CEC/MH-III-084		
		CEC/MH-III-085		
		CEC/MH-III-086		
		CEC/MH-III-087		
		CEC/MH-III-088		
		CEC/MH-III-098		
		CEC/MH-III-100		
		CEC/MH-III-101		
		CEC/MH-III-103		
		CEC/MH-III-106		
		CEC/MH-III-109		
		CEC/MH-III-110		
		CEC/MH-III-111		
		CEC/MH-III-113		
		CEC/MH-III-114		
		CEC/MH-III-115		
		CEC/MH-III-116		
		CEC/MH-III-118		
		CEC/MH-III-119		
		CEC/MH-III-121		
		CEC/MH-III-122		

Clean Environment Commission

Bipole III Transmission Project

Package #2

July 2012

Manitoba Hydro

Date	May 29th , 2012
Reference	Executive Summary and Introduction
Source	CEC Information Request # 2
Question	CEC/MH-II-001b

Question:

Reference: Executive Summary and Introduction – Volume 1

When will the final version become available for the EnvPP?

Response:

The Project EnvPP will be finalized prior to the start of construction, once final *Environment Act* licence conditions have been reviewed and incorporated. Draft Construction Phase EnvPPs will be developed for construction contract purposes and will be finalized at the same time as the Project EnvPP.

Date	May 29, 2012
Reference	Executive Summary and Introduction
Source	CEC Information Request # 2
Question	CEC/MH-II-001d

Question:

Reference: Executive Summary and Introduction – Volume 1

Please provide a final series of data and subsequent mitigation and monitoring activities.

Please provide updated data, resulting conclusions and amended mitigation and monitoring plans as required in areas where deficiencies have been identified.

Response:

The only area identified as requiring additional information in the Executive Summary is caribou. It was stated, "In the case of the boreal woodland caribou, Manitoba Hydro asked its consultants to develop enhanced mitigation measures and to provide suggestions for monitoring and adaptive management that will be reviewed with Manitoba Conservation and will be reconsidered when the Province and the Federal Government publish, in 2012, their respective caribou recovery strategies." Manitoba Hydro has already responded to numerous information requests with further information , and intends additional to file additional material on woodland caribou.

Date	May 29th 2012
Reference	Executive Summary and Introduction
Source	CEC Information Request # 2
Question	CEC/MH-II-001i

Question:

Reference: Executive Summary and Introduction – Volume 1

With respect to discussions of the mitigation measures with the Fox Lake Cree Nation, please provide comments on the results of these discussions in light of the supplemental filing and the Fox Lake Report.

Response:

Manitoba Hydro is committed to working with Fox Lake Cree Nation to discuss the results of their final report, concerns with the project and relevant mitigation measures. Fox Lake Cree Nation and Manitoba Hydro have engaged in these discussions as part of the Impact Settlement Agreement (ISA) Keewatinoow Converter Station consultation process since late 2009, meeting on a monthly or biweekly basis to discuss project-related issues. The ISA, which was signed by Manitoba Hydro, the Province of Manitoba, and Fox Lake Cree Nation in 2004, addressed the impacts of past Manitoba Hydro developments on the community. The agreement also outlines a process to address the adverse effects associated with a new converter station and other types of future developments. Fox Lake Cree Nation and Manitoba Hydro agreed to expand the process being undertaken with respect to the Keewatinoow converter station to include discussion of the Bipole III transmission line.

Fox Lake Cree Nation's final report, titled the Keewatinoow Converter Station & Bipole III Aski Keskentamowin Report and dated December 16, 2011, identifies a number of the Nation's concerns with the Bipole III project. The main findings of the report have been presented and discussed at ISA meetings. Manitoba Hydro and Fox Lake Cree Nation have also engaged in discussions to identify and evaluate potential mitigation measures. Most recently, Manitoba

Hydro presented an overview of the Bipole III Draft Environmental Protection Plan with Fox Lake representatives. This presentation linked a number of Fox Lake Cree Nation's concerns with the Project to Manitoba Hydro's proposed mitigation measures. In follow up to this presentation, Manitoba Hydro has requested Fox Lake Cree Nation's direction on how Manitoba Hydro may proceed in getting feedback on the Draft Environmental Protection Plan from Fox Lake Cree Nation members.

Manitoba Hydro and Fox Lake Cree Nation continue to work to describe adverse effects which cannot be addressed through mitigation and negotiate an agreement to compensate Fox Lake Cree Nation for adverse effects. Manitoba Hydro has entered into a series of process funding agreements with Fox Lake Cree Nation which have funded the Nation's participation in this process since its inception.

Date	May 29 2012
Reference	Executive Summary and Introduction (Pg. 1-16 Section 1.5)
Source	CEC Information Request # 2
Question	CEC/MH-II-001j

Question:

Reference: Executive Summary and Introduction – Volume 1

Please reference all technical reports and conclusions reached by its consultants that MH does not necessarily agree.

Volume 1 pg. 1-16 Section 1.5

While technical reports, including the self-directed studies of First Nations and Manitoba Metis Federation were read and drawn upon in the preparation of the EIS, Manitoba Hydro does not necessarily endorse all of the findings and conclusions in them and reminds readers that the While technical reports Nations, the Manitoba Metis Federation, aboriginal communities and the sharing of information does not mean that any of the persons concerned necessarily agree with all, or any particular, conclusions set out in the EIS or that they support the licensing of the Project.

Response:

When supporting documents have different authors than the main document, it is accepted professional practice to include a disclaimer in the main document. As such, this statement was not intended to indicate that there are necessarily differences in the findings and conclusions in the technical reports and the EIS.

As per page 3 of Chapter One of the EIS, “Team work was essential throughout the work of design and environmental assessment and every significant conclusion required for design and environmental assessment came only after debate and analysis by the particular Manitoba Hydro staff and consultants whose particular skills and knowledge were relevant to whatever topic was under consideration.

Accordingly, the preparation of this EIS required the assembly and assessment of a wide variety of studies and opinions, some of them provided by specialists retained by Manitoba Hydro, some of them provided by citizens of Manitoba at public forums, some of them provided through meetings and contractual arrangements with aboriginal communities, First Nations and the Manitoba Metis Federation. Not surprisingly, on many aspects of the Project, there was no ready consensus on many important issues. Manitoba Hydro has attempted in this EIS to set out fairly the opinions given to it but the EIS, in the end, is Manitoba Hydro's "statement" about the Project and it reflects Manitoba Hydro's judgment after weighing opinions and evidence on the issues, from choice of Project to meet the need for improved reliability to assessment of the effects of the Project on a host of biophysical and environmental factors. Wherever practical, the opinions and concerns Manitoba Hydro heard through consultations and meetings were accommodated through the balancing of routing choices and the siting of facilities. However, the essence of balancing and compromise is that no one point of view can necessarily prevail."

MH has not identified a particular reference or conclusion in a consultant's report with which it disagrees.

Date	May 29, 2012
Reference	Draft EPP
Source	CEC Information Request # 2
Question	CEC/MH-II-002a

Question:

Reference: Draft Environmental Protection Plan

Please indicate who will be responsible (both internally and externally) for the monitoring of MH activities (e.g., use of herbicides), and how often the monitoring takes place.

Response:

Monitoring of Manitoba Hydro (MH) activities related to the construction and maintenance of the Bipole III transmission line will be undertaken by MH transmission line construction staff. All construction activities will be monitored by a Manitoba Hydro environmental inspector to ensure compliance with the *Environment Act* licence and the Environmental Protection Plan. In addition, all monitoring will be documented and summarized in the annual project monitoring report that is submitted to Manitoba Conservation and Water Stewardship as part of the anticipated terms and conditions of the licence.

Manitoba Hydro's maintenance staff is responsible for maintaining the rights-of-way and associated transmission line facilities. Monitoring and inspection of transmission line infrastructure is conducted on an annual basis. All maintenance activities (i.e. structure repair; herbicide application) are conducted by qualified MH employees.

It is expected that regulatory agencies will conduct their own monitoring of MH activities during construction and operation of the Project and MH is unable to comment on how frequently this monitoring may take place.

Date	May 29 2012
Reference	Draft EPP
Source	CEC Information Request # 2
Question	CEC/MH-II-002c

Question:

Reference: Draft Environmental Protection Plan

Please indicate if there is a reporting system for monitoring and is it accessible to the public? What is the frequency of the monitoring reporting system?

Response:

Manitoba Hydro will have in place an Environmental Protection Management System (EPMS) that will provide a single interface to store environmental documentation. It will be utilized by project staff to submit items such as permits, inspection reports, plans, logs, and checklists for the management of environmental protection implementation, regulatory compliance and incident reporting. The EPMS will be integrated with project communications, inspection, biophysical, socio-economic, and heritage monitoring.

In terms of public access to the information, it is anticipated that Annual Reports will be submitted to Manitoba Conservation and Water Stewardship as per the requirements of the licence and will be available in the public domain.

Date	May 29th 2012
Reference	Draft EPP
Source	CEC Information Request # 2
Question	CEC/MH-II-002d

Question:

Reference: Draft Environmental Protection Plan

Please provide the job descriptions and responsibilities for the following positions: Transmission Environmental Officer; Environment officers/inspectors; and environment monitors.

Response:

The proposed environmental inspection and monitoring program for the transmission line construction will consist of the following positions:

Senior Environmental Assessment Officer: this position is based in the transmission line construction section and will have the overall responsibility for the implementation of the Environmental Protection Plan (EnvPP) and associated staff. This senior position will work with the construction supervisors and contractors to ensure that all aspects of the EPP are understood and followed. This position will work in conjunction with the Licensing and Environmental Assessment Department to ensure that the *Environment Act* licence terms and conditions are adhered to and will provide input into the annual monitoring report. This position will liaise with MB Conservation in the various regions as construction activities are undertaken and will provide the main communication point to address any issues or concerns related to the EnvPP should they arise. A job description is noted below.

- ***Principal Duties***

- Prepares project budget estimates and environmental assessment plans based on the need for, timing of, scope of, and estimated costs of environmental assessments required to obtain project environmental licenses.
- Manages environmental assessment programs and preparation of Environmental Impact Statements and guides multi-disciplinary consultant teams and internal technical staff in gathering, organizing, evaluating and reporting environmental impact evidence.
- Manages environmental consulting services, including work specification, evaluation of proposals and contract administration.
- Organizes and leads inter-departmental project teams providing input into environmental assessments.
- Develops collaborative working relationships, internally and externally, necessary to identify and incorporate best practices in areas of strategic importance to environmental assessment and successful licensing of capital projects.
- Organizes, develops and leads public consultation programs, internal inter-divisional project assessment teams and participates in government environmental reviews and public hearings.
- Manages and/or conducts the preparation of environmental protection and monitoring plans and provides support to construction and maintenance staff in the implementation of said plans.
- Writes project descriptions, assessment summaries, position papers and correspondence at a high degree of accuracy for a variety of internal and external audiences.
- Prepares environmental screening documentation for sub-transmission facilities.
- Manages schedules and budgets for project environmental assessments and protection and monitoring plans.
- Maintains awareness of contemporary environmental assessment methods and processes that may be employed in assessing and quantifying and potential for environmental impacts including addressing concerns that arise during stakeholder consultation.
- Evaluate, strategize and coordinate activities related to Manitoba Hydro participation in federal *Species at Risk Act* – Recovery Planning.

Environmental Inspectors: this position will report directly to the Senior Environmental Assessment Officer but during construction will work directly with the construction supervisors and contractors to ensure compliance with the EnvPP. There will be a training program developed to ensure that the inspectors are well versed in all aspects of the EnvPP, the *Environment Act* licence and how to effectively undertake inspection activities in the field. A job description is noted below.

- ***Functional Responsibility***

- Under the general direction of the Senior Environmental Assessment Officer, Transmission Line and Civil Construction, will be responsible for all activities related to environmental protection practices (EPPs), while working collaboratively with internal and external stakeholders and consultants for all Transmission Line projects. Will participate on other initiatives to achieve regulatory compliance for existing operations and meet Corporate environmental policies. This position will be required to interact with staff at all levels as well as government regulatory authorities, First Nations, external environmental practitioners, academic institutions and affected/interested parties.

- ***Principal Duties***

- Perform inspection of all aspects of transmission line construction including right-of-way clearing, foundation and anchor installation, assembly and erection of structural steel and wood pole structures. Perform inspections of all aspects of communication tower installation and maintenance including foundations and anchor installation, assembly and erection of structural steel towers and installation of appurtenances such as antennas, feed lines and associated equipment.
- Ensure that construction projects are carried out in accordance with applicable safety plans, guidelines and codes. Assist in the preparation and implementation of Job Safety Plans. Participate in or conduct job tailboard meetings as required. Be familiar with, and adhere to, the Manitoba Hydro Safety Manual, and other approved practices and procedures.
- Undertake daily inspections during construction, of transmission line projects and related facilities to ensure compliance with the environmental protection plans (EnvPPs).

- Undertake investigation of project related environmental incidents and safety issues and prepare written reports.
- Participate in safety and environmental training as required and directed by supervisor.
- Assist as required in procuring approvals, permits and licenses for the Project.
- Prepare and submit daily project reports.
- Participate in follow up activities during the construction phase to ensure Project activities are in compliance with regulatory requirements, to verify the accuracy of Environmental Impact Assessment predictions and to determine the effectiveness of mitigation measures.
- Ensure site compliance with Corporate Environmental Management Systems (EMS) procedures.
- Monitor and record environmental protection activities to ensure that environmental protection measures are implemented.
- Make regular reports to the Senior Environmental Assessment Officer and the Manitoba Hydro Construction Supervisor regarding monitoring activities, assisting in making recommendations for improving impact management arrangements and practices, and suggestions for resolving community during current and upcoming project work phases.

Environmental Monitors: these positions will work directly with the environmental inspectors and provide assistance with inspection duties as required. The main function however, will be to undertake any monitoring during active construction as part of the Biophysical Monitoring Plan that is approved by MB Conservation (e.g. taking samples; doing observations for bird nests; pre-construction surveys). These positions have not yet been developed in terms of a job description or the hiring criteria due primarily to the fact that the monitoring plan will be driven by what is required under the licence.

For the converter station the organization of the environmental inspection/monitoring is slightly different and is outline below.

Converter Station Site Environmental Officer

- ***Functional Responsibility***

- Under the general direction of the Site Manager is responsible for all activities related to environmental protection practices for the Converter Stations while working collaboratively with internal and external stakeholders. Will also ensure the Environmental Protection Plan (EnvPP) measures are implemented, and issues are corrected, documented and reported on.

- ***Principal Duties***

Project Environmental Protection Plan (EnvPP)

- Conducts environmental compliance monitoring to ensure that the terms of the EnvPP and other project environmental approvals are followed.
- Participates in orientation of environmental requirements to the contractor(s), their staff and Manitoba Hydro personnel.
- Works with the contractor to ensure regulatory compliance and implementation of the EnvPP.
- Conducts daily construction site inspections maintaining a record of all activities.
- Documents any construction site issues or mitigation measures required to address unanticipated effects.
- Reports environmental incidents immediately to the Resident Engineer or delegate.
- Liaises with local Manitoba Conservation and Water Stewardship personnel.
- Ensures that construction activities cease at a particular location if heritage resources (or human remains) are discovered and contacts the Resident Engineer or delegate.
- Conducts a final inspection of any rehabilitated sites with the Resident Engineer or delegate, contractor and the regional Natural Resources Officer (Manitoba Conservation and Water Stewardship).
-

Corporate Environmental Management System (EMS)

- Ensures site compliance with Corporate Environmental Management system (EMS) which includes Safety Management System.

- Participates in the development of the spill response plan and annual testing and documentation.

Date	May 29 2012
Reference	Draft EPP
Source	CEC Information Request # 2
Question	CEC/MH-II-002e

Question:

Reference: Draft Environmental Protection Plan

Who will do this monitoring and what reporting protocol is in place?

Response:

Monitoring will occur at various phases and scales during the Project. Various individuals and groups will be involved in monitoring including project staff, inspectors, environment officer, environmental specialist . Specialist consultants may also be retained for monitoring of specialized disciplines such as aquatics, vegetation, wildlife and community knowledge. It is anticipated that Annual Reports will be submitted to Manitoba Conservation and Water Stewardship as per the requirements of the licence. These reports will also be made available on the Manitoba Hydro Bipole III Transmission Project website. See also *CEC-MH-II-002f*.

Date	May 29 2012
Reference	Draft EPP
Source	CEC Information Request # 2
Question	CEC/MH-II-002f

Question:

Reference: Draft Environmental Protection Plan

How does the "chain of command" work if the monitoring process detects a problem?

Response:

Monitoring will occur at various phases and scales during the Project. The chain of command associated with detection and management of any issues that arise will depend on type and nature of the issue.

Manitoba Hydro environmental staff (e.g. environment officer, environmental inspector, environmental specialist) will be notified of issues when they arise, as will the construction supervisor/resident engineer, to determine the appropriate course of action. Reporting protocol will be established and reinforced regularly with project and Manitoba Hydro staff. If environmental staff confirm an issue (e.g. as indicated by the monitoring data collected), the Construction Supervisor/Site Manager for that project component would be notified along with a Manitoba Hydro senior environmental assessment officer to determine the course of action and communication with Manitoba Conservation and Water Stewardship or other regulatory agencies.

Date	May 29 2012
Reference	Draft EPP
Source	CEC Information Request # 2
Question	CEC/MH-II-002h

Question:

Reference: Draft Environmental Protection Plan

Why are regulators not notified in respect of petroleum container leaks and spill response?

Response:

As per our response to question *MCWS/MH-TAC-005a* received from Manitoba Conservation and Water Stewardship on May 16th,

"Manitoba Hydro recognizes that spills must be reported to Manitoba Conservation in accordance with the Notice and Reporting regulation (MR 126/2010) under the *Environment Act*. Spills and accidents with dangerous goods must also be reported under the Environmental Accident Reporting regulation (MR 439/87) under the *Dangerous Goods and Transportation Act*. Manitoba Hydro is committed to compliance with these regulations, and will use the Environmental Emergency Response number to report spills of hazardous materials that are likely to have a significant adverse effect on the environment, or exceed reportable quantities as defined in the Environmental Accident Reporting regulation."

Date	May 29 2012
Subject	Process/Spills and Releases
Source	CEC Information Request # 2
Question	CEC-MH-II-002i

Question:

Reference: Draft Environmental Protection Plan

Please clarify an apparent inconsistency (p.69) as to what circumstances that regular reporting and notification of regulators of emergency or contingency situations with reference to h) above.

Response:

As per our response to *CEC-MH-II-002h*, and *MCWS/MH-TAC-005a***:**

"Manitoba Hydro recognizes that spills must be reported to Manitoba Conservation in accordance with the Notice and Reporting regulation (MR 126/2010) under the *Environment Act*. Spills and accidents with dangerous goods must also be reported under the Environmental Accident Reporting regulation (MR 439/87) under the *Dangerous Goods and Transportation Act*. Manitoba Hydro is committed to compliance with these regulations, and will use the Environmental Emergency Response number to report spills of hazardous materials that are likely to have a significant adverse effect on the environment, or exceed reportable quantities as defined in the Environmental Accident Reporting regulation."

To further clarify those instances when reporting to an external regulator is required, guidance is provided in the Manitoba Hydro Hazardous Materials Management Handbook and specific spill response plans as to how to respond to a release of a hazardous or controlled substance, and to whom the release must be reported.

Date	May 29 2012
Reference	Monitoring
Source	CEC Information Request # 2
Question	CEC/MH-II-002jk

Question:

Reference: Draft Environmental Protection Plan

What is the track record of MB Conservation in monitoring and enforcing environmental compliance by MH? What was the experience with Wuskwatim ?

Does MB Conservation have the resources to monitor the work of MH?

Clarification of J and K. It is not expected that MH will provide a response for MB Conservation, but what has been MH's experience with the direction and monitoring of projects by MB Conservation. Has the direction, monitoring and enforcement been timely, specific and adequate? Does MH consider that MB Conservation has the necessary resources and expertise to provide the necessary direction and monitoring?

Response:

Manitoba Hydro has worked closely with Manitoba Conservation and Water Stewardship (MCWS) during the course of the Wuskwatim Project. In anticipation of the Bipole III Transmission Project, Manitoba Hydro and regional MCWS staff are presently working to establish communication linkages. The intent of these semi-regular meetings is to update MCWS Regional Directors as to the status of the Environmental Protection Plan (EnvPP) and to communicate how Manitoba Hydro environmental inspection and monitoring will be undertaken with the objectives of being proactive in dealing with potential environmental issues that may arise, and ensuring compliance with the *Environment Act* licence.

Manitoba Hydro cannot comment on the resources or expertise available to MCWS and how they are allocated.

Date	May 29 2012
Reference	Chapter 7
Source	CEC Information Request # 2
Question	CEC-MH-II-003d

Question:

Reference: Preliminary Preferred Route/Final Preferred Route – Chapter 7

It is stated over and over in many parts of the document that firearms and hunting will be managed at the construction camps, mostly using safety regulations. Hunting and fishing regulations will apply to non-aboriginals. How can restrictions (other than safety) be imposed on aboriginal workers? And if restrictions cannot be imposed, how will their impact be monitored, documented and otherwise addressed?

Response:

Hunting and fishing are regulated by Manitoba Conservation and Water Stewardship and as such the monitoring of the impacts from those activities fall under their jurisdiction.

Manitoba Hydro (MH) will restrict firearms in project locations in order to ensure project personnel safety. MH's Safe Work Procedures will apply to Bipole and any firearms that may be allowed into the project locations will need to be duly authorized as per those procedures. Given the safety concerns with firearms in camps or on active construction sites, firearms and the ability to engage in hunting activities while on site will be restricted. Any hunting that project personnel wish to engage in will not be allowed within the vicinity of those construction camps or sites and as with Wuskwatim a buffer around those locations will be implemented.

Date	May 29th 2012
Reference	Vegetation
Source	CEC Information Request # 2
Question	CEC-MH-II-006gi

Question:

Reference: Re-vegetation

i) Rehabilitate with native vegetation, please provide proposed plans in the boreal region. Are there any boreal seed mixes and seeds in this environment, what is their provenence and species make up?

ii) How will this help caribou? Will it attract other species and their predators?

Response:

A mitigation measure was developed to address woodland caribou effects (p.8-99 Chapter 8 EIS) that indicated areas temporarily cleared for Project construction would be rehabilitated through the planting of native vegetation. This is only intended to be carried out in a small local area of woodland caribou occurrence where rapid re-vegetation is desired to provide security cover and encourage animal movement across the right of way. The re-vegetation plan for these select areas would involve the transplanting of some adjacent shrub and tree species (that would not provide enhanced browse for moose) onto the cleared ROW and would not involve new seed mixes.

Date	May 29th 2012
Reference	Agriculture Technical Report
Source	CEC Information Request # 2
Question	CEC/MH-II-007k

Question:

Reference: Agriculture – Volume 10.0

Why is special compensation deserved for an agricultural practice such as aerial spraying that may not be essential now or in the future? What percentage of crops along the proposed route of Bipole III are sprayed by aerial means?

Response:

The installation of the Bipole III transmission line will have an effect on aerial spraying practice. While the presence of the transmission line does not preclude aerial spraying on a quarter section it will restrict its use in proximity to the line. The landowner compensation plan has identified the limitations that are created by Bipole III on this practice as compensable under ancillary damage compensation (see brochure below). Aerial spraying is a widespread crop management practice used by many agricultural producers. Whether the practice of aerial spraying is essential now or in the future is a decision for local producers and not Manitoba Hydro.

The percentage of crops or cropland along the route that use aerial spraying in their crop production systems is not precisely known. A summary of responses landowners provided during Round 4 consultation to a question on aerial spraying is summarized in Chapter of the EIS (Figure 5.5-2, p5-53). From that survey less than half of respondents indicated they use aerial spraying in their systems. Also, the amount of land along the route that uses aerial spraying will change from year to year depending on the crop, weather, moisture conditions, and potential for crop damage from pests and disease.

the property. Ancillary Damage Compensation is negotiated and includes but not limited to:

- Agricultural impacts (irrigation and aerial spraying);
- Constraint impacts (use of established sand and gravel pits); and
- Transitional impacts (highest and best use of land).

Frequently Asked Questions

How is compensation determined?

For the granting of an easement, landowners are eligible to receive four (4) types of compensation:

- Land Compensation includes 150% of the market value of their land for the Bipole III HVDC transmission line right-of-way;
- Construction Damage Compensation applies to damages caused by construction of the Bipole III HVDC transmission line;
- Structure Impact Compensation includes one-time lump sum payment for each tower located on agricultural lands; and
- Ancillary Damage Compensation applies where Manitoba Hydro's use of the right-of-way directly or indirectly impacts the use of the property.

Is Manitoba Hydro's compensation policy different than in past years?

Yes, feedback from landowners has resulted in two major compensation enhancements:

- Land Compensation for the Bipole III HVDC Transmission Line has been increased to 150% of land market value; and
- Upon the signing of the easement agreement, Ancillary Damage Compensation payments will be paid up front along with the Land Compensation payments.

Are Landowners eligible for a buyout?

While easements are preferred to allow landowners the ability to continue farm operations, in special circumstances, a buy-out can be offered to provide compensation to landowners for all related and reasonable relocation costs, where the proximity of the Bipole III HVDC Transmission Line is within 75 metres of the landowner's residence.

How are compensation payments determined?

Land Compensation for an easement is determined by multiplying your municipal assessment land value by the current market value ratio to determine market value. The market value is then multiplied by 150% to determine the Land Compensation payment.

Construction Damage Compensation is for damage caused by construction of the Bipole III HVDC Transmission Line. Construction Damage Compensation will be negotiated and compensated on an individual case basis.

Structure Impact Compensation is determined by size and numbers of tower structures in an easement area. You would be compensated based on the structure payment multiplied by the number of structures. The structure payment is based on data obtained from the Manitoba Agricultural Services Corporation and the type of agricultural lands.

Ancillary Damage Compensation applies where Manitoba Hydro's use of the right-of-way directly or indirectly impacts the use of the property. Ancillary Damage Compensation is negotiated and compensated on an individual case basis.

As a tenant, what can I expect for compensation from the Bipole III HVDC Transmission Line?

Tenants may be eligible for Ancillary Damage Compensation where Manitoba Hydro's use of the right-of-way directly or indirectly impacts the use of the property, and Construction Damage Compensation for damages caused by construction of the Bipole III HVDC Transmission Line.

Contact Information

Curtis McLeod
Capital Projects Supervisor

Lauris Kleven
Bipole III Project Coordinator

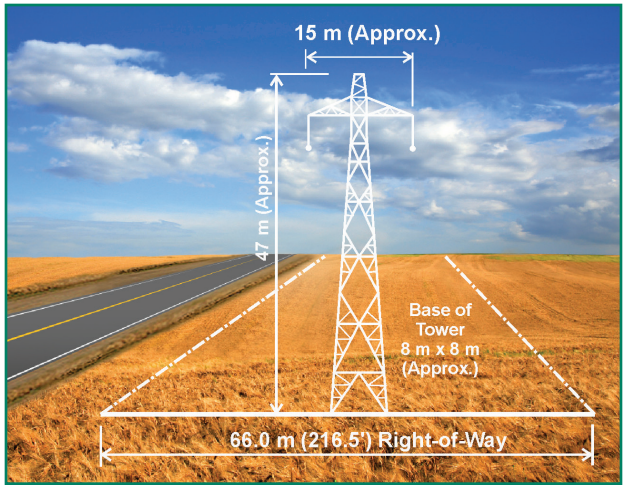
Address: Manitoba Hydro, Property Department
P.O. Box 7950, Station Main
Winnipeg, MB R3C 0J1

Toll Free: 1-877-343-1631 **In Winnipeg:** 360-7888
Email: bipole3@hydro.mb.ca
Project Website: www.hydro.mb.ca/bipole3

Bipole III

Landowner Compensation Information

Bipole III HVDC Transmission Line Landowner Compensation Information



Example of a 66m (216.5') easement for transmission line right-of-way

Landowners affected by the installation of the proposed Bipole III HVDC Transmission Line located on or crossing their properties can expect to be compensated. This brochure describes the four (4) different types of compensation available to landowners.

These categories include:

- **Land Compensation** - to landowners granting an easement for the right-of-way;
- **Construction Damage Compensation** - to landowners for damages caused by construction activities;
- **Structure Impact Compensation** - a one-time payment to landowners for each tower located on agricultural lands; and
- **Ancillary Damage Compensation** - where Manitoba Hydro's use of the right-of-way directly or indirectly impacts the use of the property.

Land Compensation

Land compensation is the payment to landowners for granting of an easement for the Bipole III HVDC Transmission Line right-of-way. In order to calculate the land compensation the following factors are considered:

- Total area (acres) of easement required by Manitoba Hydro for the Bipole III HVDC Transmission Line right-of-way;
- The market value of the land (per acre) determined by multiplying an assessed land rate by a current market value ratio; and
- The easement compensation percentage.

For example, if the easement area required is 1,609 meters in length and 66 meters in width the total area of the easement is approximately 26.24 acres. If the land is assessed at $1,000 per acre the following compensation formula will apply:

$1,000 (assessed land rate per acre) x 1.3 (current market value ratio) x 150% (easement compensation factor) x 26.24 (acres) = $51,168.

Construction Damage Compensation

Construction Damage Compensation is available to landowners who experience any kind of damage to their property due to the construction of the Bipole III HVDC Transmission Line. Construction Damage Compensation is negotiated. Landowners can expect to be compensated as follows:

- Manitoba Hydro will be responsible for repairing, to the satisfaction of the landowner, any damage to a landowner's property.
- Manitoba Hydro will also compensate a landowner for damages such as the reapplication or rejuvenation of compacted top soil where the remedial work requires farm machinery and the expertise of the landowner.

In the instance of damage to crops a landowner would be compensated as follows:

If crops were in place prior to the construction of the Bipole III HVDC Transmission Line, the crop owner would be compensated for the amount of loss due to damage. This compensation is based on the current value of the harvested crop multiplied by the damaged area (per acre) and multiplied by the crop owner's yield of that same crop.

For example, $6.01 (wheat / $ per bushel) x 4.25 (acres / area damaged) x 55 (yield / bushel per acre) = $1,404.84

Structure Impact Compensation

Structure Impact Compensation applies to lands classed as agricultural such as; natural hay land, seeded hay land (alfalfa), cereal crop land (wheat, canola), and row crop land (corn, potatoes). Landowners who qualify can expect to receive a one-time lump sum payment for each tower located on agricultural lands. Manitoba Hydro prepares a compensation schedule based on current data provided by Manitoba Agricultural Services Corporation.

Structure Impact Compensation covers:

- Crop losses on lands permanently removed from production,
- Reduced productivity in an area of overlap around each tower structure,
- Additional time required to maneuver farm machinery around each structure, and
- Double application of seed, fertilizer and weed control in the area of overlap around each tower structure.

The compensation schedule takes into consideration the four (4) types of agricultural lands; the type of tower structure constructed on the land; and the location of the tower structure in relation to property lines.

For example in accordance with the current (2011) compensation schedule for a tower structure similar to the size of the Bipole III HVDC Transmission Line tower structure, the compensation rates are as follows:

- natural hay land / $5,490 each;
- seeded hay land / $9,270 each;
- cereal crop land / $13,550 each; and
- row crop land / $20,970 each.

Assuming there are a minimum of three (3) tower structures per mile of transmission line and the land is classed as cereal crop lands, the compensation would be:

- $13,550 (structure payment) x 3 (number of structures) = $40,650

Ancillary Damage Compensation

Ancillary Damage Compensation applies where Manitoba Hydro's use of the right-of-way directly or indirectly impacts the use of

Date	May 29 2012
Reference	Agriculture Technical Report
Source	CEC Information Request # 2
Question	CEC/MH-II-007m

Question:

Reference: Agriculture Technical Report– Volume 10.0

With respect to compensation policy, why does the list at the end of Section 9.8.2, Page 71 not include another bullet: "Loss of efficiency in machinery operations"?

Response:

"Loss of efficiency in machinery operations" as it relates to an over adequacy of equipment is taken into consideration as part of Manitoba Hydro's transmission line routing, tower locating and tower type selection criteria. Right-of-way alignments, tower type and locations take into account the size of modern farm equipment and are typically selected to minimize the effect on machinery efficiencies. Manitoba Hydro will be using self-supporting towers on cultivated lands thus minimizing their related affects. Due to the small footprint of these structures, the over adequacy of equipment (*loss of efficiency in machinery operations)* calculations are significantly less than 1% which is deemed negligible and therefore was not included.

Date	May 29 2012
Reference	Converter Stations
Source	CEC Information Request # 2
Question	CEC/MH-II-008a

Question:

Reference: Converter Stations

Please indicate whether the original design for the Henday Converter Station accounted for the future accommodation of a converter station for Bipole III. If this was an option, please provide supporting material for the proposed Keewatinoow site.

Response:

The above stated question was considered. Early planning studies in the 1970's and 1980's considered Henday station as a potential terminating point for the future Bipole III. The concept at the time was to design a common site for Bipoles II & III (a "Dorsey like") station, largely to reduce cost and ease of accessibility to the existing site.

However, with the risk associated with the potential to lose a large amount of power (4000MW) by designing one common station, terminating Bipole III at Henday was deemed not acceptable in terms of system reliability. With the main objective of the Bipole III Transmission Project being reliability, a key design consideration is to address risks of large power loss due to the common station and/or line failures of the HVdc system. The reliability objective is achieved by maintaining reasonable physical separation between the HVdc facilities.

In addition to the above reliability considerations used in siting the Keewatinoow Converter Station, the proximity to the proposed future Conawapa Generating station site was also a factor which would reduce potential infrastructure costs and transmission losses.

Date	May 29th 2012
Reference	Reference: Mammals Volume 3
Source	CEC Information Request # 2
Question	CEC/MH-II-010d

Question:

Reference: Mammals Volume 3

Impacts of increased access will also need to be determined through empirical studies to provide a basis for future access and harvest limits.

Response:

Monitoring as presently proposed will capture some of the data and observations that will facilitate planning for future access. In addition, Manitoba Hydro is aware that the Department of Conservation and Water Stewardship pursues its own monitoring of harvest and harvest limits.

Date	May 29 2012
Reference	Reference: Mammals Volume 3
Source	CEC Information Request # 2
Question	CEC/MH-II-010f

Question:

Reference: Mammals Volume 3

In the technical report it is mentioned that a bat hibernacula occurs just south of Ponton, although no mention of this was made in the main report. Will the line have any impact on this species? If it is unknown, are there any actions to be taken to verify this?

Response:

The Bipole III transmission line is not anticipated to affect bat populations because known hibernacula will not be affected by the Project. The nearest known bat hibernacula is located in the Moose Lake area approximately 42 km from the Final Preferred Route (FPR). The bat hibernacula located south of Ponton are located even further than 42km from the FPR. If bat hibernacula are found during construction, Environmental Protection Plan measures will follow provincial guidelines (Manitoba Conservation 2010).

References:

Manitoba Conservation. 2010. Manitoba Conservation Forestry Practices Guidebook: Forest Management Guidelines For Terrestrial Buffers 2010-2015. 14pp.

Date	May 29 2012
Reference	CEC Information Request #2
Source	CEC Information Request # 2
Question	CEC/MH-II-012

Question:

Reference: - Forestry Volume 4

It is indicated that the amount of forest that needs to be withdrawn from the FMLs will be minimal and not affect operations. Do the companies agree? Please see TAC comments.

Response:

The amount of productive forestland that will need to be withdrawn from FMLs #2 and #3 as a result of the proposed project represent 0.1% and 0.13% respectively of the total within the FMLs (Forestry Technical Report, Section 6.1.2.1, Table 6-3). Manitoba Hydro did not review this subject with these companies.

Details of the effects assessment on forestry values are contained in the Bipole III Transmission Project Forestry Technical Report. The project effects assessment is based on actual forest resources inventory (FRI) data within the Commercial Forest Zone and includes the assessment on the two Forest Management License (FML) areas affected, namely FML #2 (Tolko Industries Ltd.) and FML #3 (Louisiana Pacific Canada Ltd.). Manitoba Conservation and Water Stewardship, Forestry Branch is responsible for determining the Annual Allowable Cut (AAC) for the Commercial Forest Zone productive forestland areas. These are determined on a Forest Management Unit (FMU) basis and summed to the Forest Section and FML levels. As the resource manager, Manitoba Conservation and Water Stewardship is responsible for reviewing changes to the AAC with the companies directly.

Manitoba Hydro has and will continue to communicate with the forest companies affected by the Bipole III Transmission Project to coordinate and optimize timber salvage opportunities at the time of clearing.

Date	May 29 2012
Reference	Appendix H, p. 16, Item 7.0 – Reporting
Source	CEC Information Request # 2
Question	CEC/MH-II-016a

Question:

Reference Appendix H, p.16, item 7.0 - Reporting

Please indicate if all reports will be shared with regulators, stakeholders, aboriginal communities and the public in a timely fashion, and whether they will be made available in other formats than electronically for those who do have internet access.

Response:

Biophysical Monitoring Reports will be submitted to Manitoba Conservation and Water Stewardship (MCWS) as required by the licence conditions.

Date	May 29th 2012
Reference	Fox Lake Traditional Knowledge Report
Source	CEC Information Request # 2
Question	CEC/MH-II-018a

Question:

a) In the Fox Lake Traditional Knowledge report there is serious concern raised that as a result of the Environmental and Socio Economic studies carried out by Hydro for the EIS, as well as the ATK studies, and the presence of many workers on site over time that the locations of sensitive areas such as sites containing medicinal plants, berries, and known locations for various species of fish as well as for moose, caribou and other wildlife harvested through hunting, fishing and trapping will become widely known. Please provide the mitigative measures that will be undertaken.

Response:

Manitoba Hydro recognizes the sensitivity of the traditional knowledge (TK) that was shared and only presented TK information where there was permission to do so in the EIS materials. Communities undertook TK studies with the understanding that this information was to be used for environmental assessments and operational requirements of the proposed Bipole III Transmission Project. Contribution agreements between Manitoba Hydro and communities included provisions regarding the use of information. Prior to public release of the EIS, Manitoba Hydro confirmed with the communities that conducted self-directed studies whether the information from their TK reports could be shared publicly.

Manitoba Hydro is committed to working with Fox Lake Cree Nation to ensure that their concerns regarding the locations of sensitive areas are discussed. In addition, none of the sites identified in the TK reports were identified in the draft Environmental Protection Plan. When TK sites are incorporated into the environmental protection plans, the site must be identified on a

map to ensure protection we will refer to the sites using general statements such as “area of concern” and not specifically disclose the reason for protection.

Date	May 29th 2012
Reference	CEC Information Request #2
Source	CEC Information Request # 2
Question	CEC/MH-II-018b

Question:

Reference: ATK

Please summarize succinctly what precautions Manitoba Hydro has taken or will take in the future to keep these sites confidential both during the construction of the project and afterwards?

Response:

Contractors will be made aware of sensitive sites deemed confidential through the traditional knowledge (TK) process but will not be informed of the nature of the site (i.e. traditional gathering site for a First Nation community). Additionally, contractors awarded construction contracts will be required to sign a confidentiality agreement related to all documents or information supplied to them for the Project. Once the project is complete and Manitoba Hydro Line Maintenance assumes responsibility for the right-of-way, information regarding the location of, and special treatment required for sensitive sites will be provided via the operational EnvPP. No descriptors stating the nature of the sensitivity will be included.

Date	May 29th 2012
Reference	CEC Information Request #2
Source	CEC Information Request # 2
Question	CEC-MH-II-020b

Question:

Reference: Personal, family and Community Life

With regard to potentially new negligible negative cumulative effects on personal, family and community life, please provide a detailed community health assessment with the objective of identifying and mitigating potential adverse social effects while identifying community socio-economic and health benefits to and opportunities for local residents.

Response:

The significance evaluation framework for the effects assessment is reviewed in Chapter 4 (Assessment Approach) of the EIS; Section 4.2.10 reviews the residual effects significance evaluation criteria and at page 4-32 provides the definition for direction or nature of effect and notes that a negligible effect has “no measureable change”. Footnote 9 on that same page also notes “Negligible effects were considered in the Site Selection and Environmental Assessment to be equivalent to no residual effect.” It would not make sense and is not feasible to design a community health assessment to identify and mitigate “potentially new negligible cumulative effects”.

Date	May 29 2012
Reference	CEC Information Request #2
Source	CEC Information Request # 2
Question	CEC/MH-II-023

Question

There is limited detailed discussion of the need for Bipole III for reliability as a result of a catastrophic outage of the HVDC transmission system. Please provide a more detailed discussion and provide access to the 2001 Teshmont Consultants study "Probability of Catastrophic Outages of Bipole 1 and Bipole 2 of the Nelson River HVDC Transmission System" and the 2006 Teshmont report "A Weather Risk Assessment of the Existing and Proposed HVdc Transmission Lines." as reference material.

Response:

Chapter 2 of the EIS explains how additional north-south transmission in Manitoba will improve the reliability of supply to meet southern Manitoba load and export customer requirements. The Bipole III EIS Chapter 2 Figure 2.2-1 (reproduced below for reference) indicates a supply deficit of 1400 MW for the 2011/12 winter peak, assuming Wuskwatim generation is available.

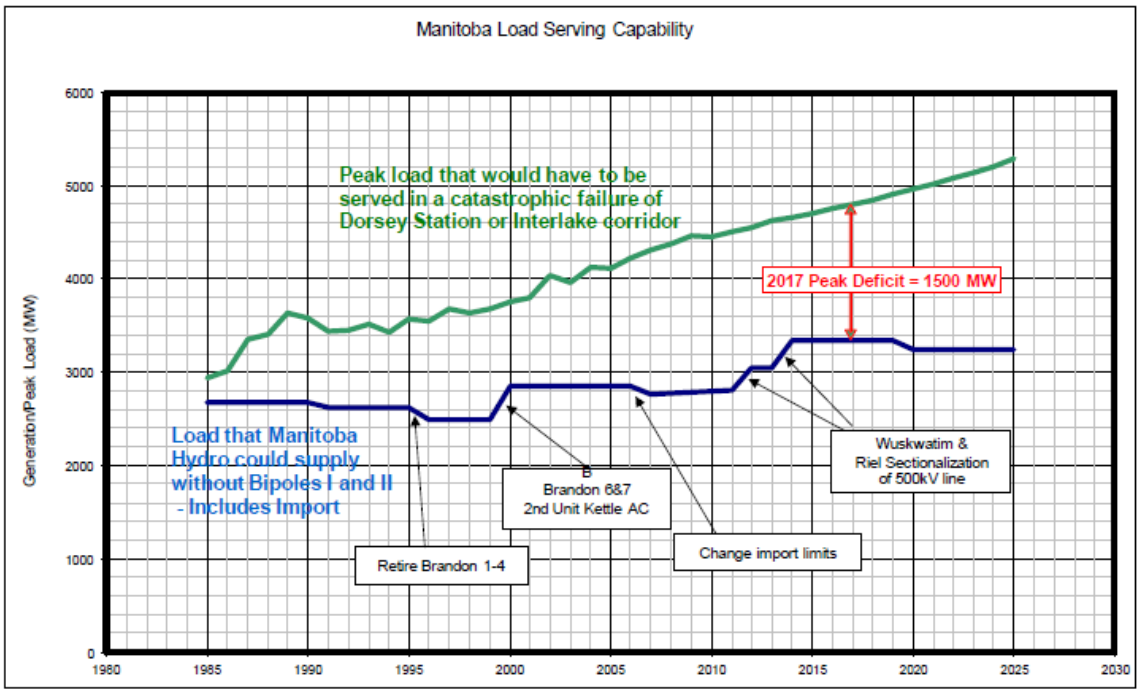


Figure 2.2-1: Load Serving Capability without Bipoles I & II

This deficit grows annually reaching 1500 MW by 2017, the proposed in-service date for Bipole III. Chapter 2 of the EIS further explains that if an outage of either the Dorsey Station or the Bipole I & II HVdc lines occurred in January 2017 Manitoba Hydro would not be able to meet demand for 85% of the time during that month. This large deficit in supply following the catastrophic loss of Bipole I and II occurs because approximately 70 % of Manitoba Hydro's generation supply is transmitted over the Bipole I and II HVdc Facilities. Manitoba Hydro has determined that consequences associated with the loss of such a large portion of the supply are deemed to be unacceptable to Manitobans.

There is no other known system with such a high concentration of power in a single facility as in Manitoba. For example, the loss of the largest station results in a 10% supply loss in Hydro Quebec, 20% in Brazil and 15% in China (See Figure 1).

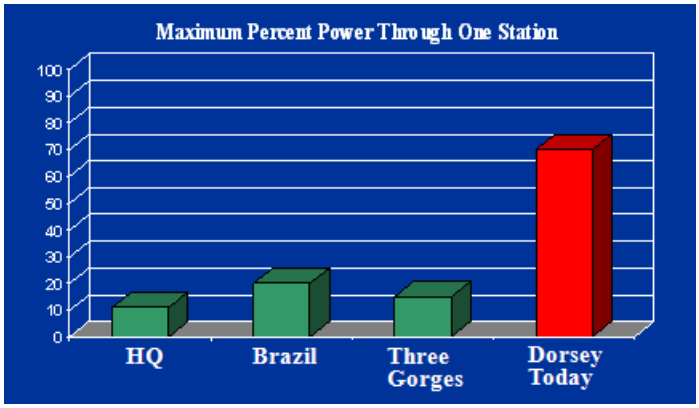


Figure 1 - Manitoba has the highest percentage of power supplied by HVdc for a major network

Society has become dependent on electricity for heating, cooling, lighting, business transactions and industrial processes which drive the Manitoba economy. An extended period of significantly reduced access to the quantity and the quality of electricity that our customers rely upon would result in serious economic and financial hardship and negative effects on quality of life including potential threats to health and well being. Implications of an extended outage (such as a Dorsey station outage) could include extensive rotating blackouts which in turn will stress equipment that could exacerbate the problem and could ultimately compromise the future viability of some businesses in the province.

Manitoba Hydro contracted Dr. R. Billington, one of the world's leading experts in power system reliability, to evaluate the societal costs of an outage. His report [1] concluded that an outage would carry a societal cost of $10/kwh in Manitoba. Given this rate, a one-year outage at Dorsey would equate to a societal cost of approximately $20 billion. In the worst case, it might take up to three years to fully restore Dorsey following a catastrophic failure. Over a longer term the economy may adjust itself and result in societal costs lower than $10/kwh. Even if this happened, the probability of significant bankruptcies, coupled with the widespread perception that Manitoba was not a good place to do business long after the shortage was rectified, could raise the long-term societal outage rate above $10/kwh. The documented cost of $9/kwh of the 1998 eastern Canada ice storm is a comparable societal cost benchmark.

Recognizing the potential widespread impact of a catastrophic event, other utilities have taken steps to mitigate risks to their supplies. For example, Hydro Quebec added reliability improvement to reduce vulnerability to ice storms following the 1998 event. Critical lines were identified and reinforced or de-iced when necessary, and new critical lines are constructed to a higher standard.

Manitoba Hydro has worked closely with other experts to evaluate the weather and other risks of losing the existing HVdc system. Since 2001, three major studies have been completed considering the advancement of study methodology and tools, and availability of extreme weather data.

The Teshmont 2001 Report [2] evaluated the probability of simultaneous catastrophic outages of both Bipole I and II in terms of fire, ice storms, wind storms, and other risks. The report concluded that a fire at Dorsey Converter Station is the highest risk to the MH HVdc transmission system. With respect to Dorsey Station, there is a 1 in 29 year probability of outage due to fire and a 1 in 200 year probability of outage due to wide front winds. The same study revealed that the probability of the loss of the Interlake corridor is 1 in 17 years from a tornado, 1 in 50 years from icing and 1 in 250 years from wide front winds. The report recommended that steps be taken to address the risks of such catastrophic failures.

The Teshmont 2006 report [3] summarized a detailed weather risk assessment on the MH HVdc transmission system with the addition of Bipole III. The probability of simultaneous failure of the three HVdc bipoles were compared for different routing options of Bipole III: Interlake, West and East corridors in terms of detrimental weather factors (icing, tornados and windstorms). The 2006 study concluded that routing Bipole III on the East route or West corridors with a 100 km separation from the existing Bipoles I&II would significantly improve the system reliability in terms of the weather related risks when compared with an Interlake corridor. The probability that all three HVdc lines would simultaneously experience wind storms, or ice and wind loadings when compared to the probability that only Bipole I and II experience such loading, is reduced by a factor of about two for the Interlake corridor and by about four or more for the East and West corridors. Such risk can be further mitigated by designing Bipole III to a higher mechanical loading criterion. The risk that all three lines would simultaneously

experience tornadoes will be reduced by factors of 20, 200 and 400 for the Interlake corridor, west corridor and east corridor respectively.

A 2012 Teshmont study [4] went further with the 2006 analysis and determined the estimated probabilities of occurrence of weather events and the probabilities of failure (i.e., collapse) for single and multiple lines considering the final preferred Bipole III west route. The 2012 report concludes that routing Bipole III West route would significantly reduce the weather related risks of the Manitoba Hydro HVdc system. In terms of tornado or downburst performance, the Bipole III FPR (Final Preferred Route) was found to reduce the risks of losing all three bipoles by more than 200 times (about 1 in 3700 years event). Synoptic (wide front) winds including wind/ice combinations remain the greatest threat to all three dc transmission lines. The probability of failure due to severe weather events (wind/ice combined) is reduced by an order of magnitude with the three dc lines. Higher mechanical tower loading criteria (1 in 500 year return) will be applied to select portions of the Bipole III line to further enhance its reliability against the wind and ice events, in sections where the separation (distance between BP III and BP I & II) is compromised by other selection criteria.

As a critical component of Bipole III, the establishment of an independent Riel station, substantially distant from Dorsey, will assure the reliability of supply in the event of catastrophic loss of Dorsey Station.

The Bipole III Transmission Project is essential in order to maintain system reliability and security of load serving in Manitoba.

References:

[1] Manitoba Customer Interruption Cost Evaluation by R. Billington, PowerComp Associates Ltd, dated October 31, 2001.

[2] Teshmont Consultants Report on “Probability of Catastrophic Outages of Bipole 1 and Bipole 2 of the Nelson River HVDC Transmission System”, Report No: 276-70000, October. 2001

[3] Teshmont Consultants Report on “A Weather Risk Assessment of the Existing and Proposed HVdc Transmission Lines.”, Report No.: 1660-10000, October. 2006.

[4] Teshmont Report on ”Weather Hazard and Reliability Assessment for the Preliminary Preferred Route of the Bipole III HVDC Transmission Line “4078-001-001-Rev00, January 2012.

Date	May 29 2012
Reference	CEC Information Request #2
Source	CEC Information Request # 2
Question	CEC/MH-II-025

Question:

In identifying past projects in the Project Study Area, only very recent projects seem to have been included. Why were Kettle Rapids, Long Spruce and Limestone Generating Stations and Bipoles I & II not included?

Response:

The cumulative effects assessment approach considers those adverse residual effects of the Project on Valued Environmental Components (VECs) (as identified in the effects assessment provided in Chapter 8) that have the potential to act in concert with the effects of other past, existing or potential future projects or human activities. As noted in Chapter 9 of the EIS (page 9-2):

> The effects of past and current projects and activities form an integral part of, and have been incorporated into, the description of the existing environment (Chapter 6). Accordingly, effects that are likely to result from the Project in combination with other projects or activities that have been carried out have generally been assessed in Chapter 8. Past projects are further addressed in this cumulative effects assessment (Chapter 9) only if on-going effects from such other projects are expected to change over time to the extent that there would be a measurable effect on the existing environment that was not already addressed in Chapter 8.

In this respect the effects of existing historic projects were considered as part of the existing environment in the effects assessment provided in Chapter 8 of the EIS. This would include Bipole I and Bipole II, as well as Long Spruce and Limestone Generating Stations.

Kettle Generating Station was specifically noted in Table 9-2.1 (under upgrades and/or rehabilitation of existing northern hydro-electric projects) which reviewed past and existing projects and activities in the Project Study Area where ongoing effects were expected to experience measurable change over time. This was included in the cumulative effects assessment.

Date	June 7th 2012
Reference	P.8 ATK Technical Report #2
Source	CEC Information Request #3
Question	CEC/MH-III-027

Question:

Please provide an update on the status of the concerns and issues raised by LPFN. Have the concerns been adequately addressed?

Response:

Manitoba Hydro representatives met with Chief and Council from Long Plain First Nation (LPFN) on May 22, 2012. A meeting to review the Draft Environmental Protection Plan and to further discuss concerns with LPFN is being scheduled.

Date	June 7th 2012
Reference	Reference: p.10 ATK Technical Report #2
Source	CEC Information Request #3
Question	CEC-MH-III-028

Question:

Please provide an update on the status of the concerns and issues raised by OCN. Have the concerns been adequately addressed?

Response:

Manitoba Hydro representatives sent a letter to Opaskwayak Cree Nation (OCN) on March 29, 2012 requesting a meeting to discuss the Draft Environmental Protection Plan for the Bipole III Transmission Project. However a meeting has not yet taken place. Manitoba Hydro is committed to working with OCN to discuss the results of their final report, concerns with the project and relevant mitigation measures.

Date	June 7th 2012
Reference	Reference: p.11 ATK Technical Report #2
Source	CEC Information Request #3
Question	CEC/MH-III-029

Question:

Please provide an update on the status of the trapping activities raised by OCN. Have the concerns been adequately addressed?

Response:

A meeting to review the Draft Environmental Protection Plan with Opaskwayak Cree Nation (OCN) has been requested; however a meeting has not yet taken place.

A letter regarding disturbance compensation for the Bipole III Transmission Project was sent on June 15, 2012 to the representative for the Elk Trap Line Area (Elk Zone); it is anticipated that meetings regarding this matter will take place in the near future.

Manitoba Hydro has a Trappers Notification and Compensation Policy that compensates trappers for disturbances while clearing and constructing transmission lines greater than 115kV in capacity. The Elk Zone registered trap line was provided disturbance compensation for the Wuskwatim Transmission Project and is also eligible for disturbance compensation for the Bipole III Transmission Project.

Manitoba Hydro is offering to meet with communities to review the Draft Environmental Protection Plan for the Bipole III Transmission Project. The intent of these meetings is to review with communities the mitigation and monitoring plans Manitoba Hydro intends to put into place, and to discuss with communities the specific mitigation and monitoring activities that relate to the concerns raised by communities.

Date	June 7th 2012
Reference	Reference: p.11 ATK Technical Report #2
Source	CEC Information Request #3
Question	CEC-MH-III-030

Question:

Please provide an update on the status of the recommendations and socio-economic considerations raised by OCN. Have the concerns and development of environmental protection plans been adequately addressed?

Response:

Please see response *CEC-MH-III-028*.

Date	June 7th 2012
Reference	Reference: p.13/14 ATK Technical Report #2
Source	CEC Information Request #3
Question	CEC/MH-III-031

Question:

Please provide an update on the status of the proposed protection of burial grounds raised by SLFN and address the mitigated measures planned regarding outstanding concerns on land issues, and enforcement of the Heritage Resources Act.

Response:

Manitoba Hydro intends to continue discussions with Swan Lake First Nation in an effort to address the community's concerns related to the Bipole III Transmission Project. The Assiniboine River crossing was identified as a sensitive site by Swan Lake First Nation as well as through an archeological inventory, developed by Manitoba Hydro's archaeological consultants. As a result, this area has been identified as a sensitive site in the Bipole III EIS. Swan Lake First Nation has completed some heritage field work in this area. A detailed survey by the Project Archaeologist working with the Swan Lake First Nation archaeologist will be conducted prior to construction.

Manitoba Hydro is offering to meet with communities to review the Draft Environmental Protection Plan for the Bipole III Transmission Project. The intent of these meetings is to review with communities the mitigation and monitoring plans Manitoba Hydro intends to put into place, and to discuss with communities the specific mitigation and monitoring activities that relate to the concerns raised by communities. Meetings are planned with Swan Lake First Nation.

Protection measures for heritage resources have been incorporated into the Environmental Protection Plan as general and specific mitigation measures. Detailed

actions and procedures for heritage discoveries will be developed by the Project Archeologist on a site by site basis. All information regarding heritage resources and/or found human remains will be submitted to the Historic Resources Branch and to the local Aboriginal Communities per the terms of both the *Heritage Resources Act* (1986) and heritage permits.

Date	June 7th 2012
Reference	EIS P. 3-135
Source	CEC Information Request #3
Question	CEC/MH-III-034

Question:

Please disaggregate the two separate risks of converter station failure, and transmission failure and report on them separately.

Response:

The Teshmont 2001 Report evaluated the probability of simultaneous catastrophic outages of the Bipole I and II transmission corridor and Dorsey stations in terms of fire, ice storms, wind storms, and other risks.

The report concluded that a fire at Dorsey Converter Station is the highest risk to the Manitoba Hydro's HVdc transmission system. With respect to Dorsey Station, there is a 1 in 29 year probability of outage due to fire and a 1 in 200 year probability of outage due to wide front winds. The same study revealed that the probability of the loss of the Bipole I & II Interlake corridor is 1 in 17 years from a tornado, 1 in 50 years from icing and 1 in 250 years from wide front winds. The report recommended that steps be taken to address the risks of such catastrophic failures.

The current final preferred route for the Bipole III Transmission Line reduces weather and other related risks to the reliability of energy supply in Manitoba, which are further addressed in responses *CEC/MH-II-08a*, *CEC/MH-II-023*, and *CEC/MH-III-035*.

Reference:

Teshmont Consultants (October, 2001). Report on "Probability of Catastrophic Outages of Bipole 1 and Bipole 2 of the Nelson River HVDC Transmission System", Report No: 276-70000.

Date	June 7th 2012
Reference	CEC Information Request #3
Source	CEC Information Request #3
Question	CEC/MH-III-035

Question:

Please provide a breakdown of the risk of failure after Bipole III is constructed. In other words if the risk with Bi Pole I & II is presently a probability of failure of 1 in every 17 years, what will be the probability of a triple failure after Bi Pole III is constructed? Also the specifics of Bipole I & 2 failures in relation to Bipole III should be provided.

Response:

The risks of the catastrophic failures of the Manitoba Hydro's HVdc system with and without Bipole III were evaluated in three major reports completed in 2001, 2006 and 2012. These studies considered the routing corridors, Bipole III Final Preferred Route (FPR), advancement of study methodology and tools, and availability of extreme weather data.

The FPR would significantly reduce the weather related risks of the Manitoba Hydro HVdc system as summarized below:

- In terms of tornado or downburst performance, the Bipole III FPR was found to reduce the risks of losing all three bipoles by more than 200 times (from about 1 in 17 year event for today's system to about 1 in 3700 years event should the proposed FPR BPIII line be constructed)
- Synoptic (wide front) winds including wind/ice combinations remain the greatest threat to all three HVdc transmission lines. The probability of failure due to severe weather events (wind/ice combined) is reduced by a minimum

order of magnitude with the three dc lines (from about 1 in 20 years return for today's system to about 1 in 200 year return or more should the proposed FPR BPIII line be constructed) .

The establishment of an independent Riel station, substantially distant from Dorsey, will help protect reliability of supply in the event of catastrophic loss of Dorsey Station. The probability of losing two converter stations is negligible.

Date	June 7th 2012
Reference	CEC Information Request #3
Source	CEC Information Request #3
Question	CEC/MH-III-039

Question:

The best solution for the over-reliance on desk studies would be to perform field studies. An additional way of dealing with this deficiency could be to use predictive modeling whereby the numbers of observations are multiplied by a certain factor to take into account the under-representation of species and archeological observations that result from a reliance on sparse or aggregated data. Please provide comments.

Response:

A variety of modeling exercises, including predictive modeling, were in fact undertaken by various study specialists to enhance their understanding of the study area, guide field work activities and assist in estimating project effects. These include:

Vegetation – Predictive modeling using LCCEB, FRI, Wetlands of Manitoba, provincial fire data, and data from the Manitoba Conservation Data Centre served to identify ecologically important areas, including locations for species of concern, and guide field studies. Details can be found in the Bipole III Transmission Project, Terrestrial Ecosystem and Vegetation Technical Report, Section 6.1.

Birds – involved the following:

- linear regression for species diversity;
- hierarchical clustering to assess bird species associations;
- non-metric multi-dimensional scaling (NMS) to assess bird groups and habitat associations;

- logistic regression to assess specific bird habitat associations;
- LCCEB-derived, literature-based, and expert opinion predictive models that identify high quality habitat for VECs; and,
- habitat models were validated by examining species presence and absence within modeled habitat areas.

Refer to the Bipole III Transmission Project, Birds Technical Report, Appendix E for further details on modeling methods.

Mammals - Habitat modeling analysis and constraints was performed for all VEC species (Beaver, American Marten, Moose, Elk and Wolverine). Descriptions of these models can be found in the Bipole III Transmission Project, Mammals Technical Report, Section 3.4.1.

Caribou – involved the following. Refer to the Bipole III Transmission Project, Caribou Technical Reports for details.

- Habitat Modeling Analysis and Constraints, and Boreal Woodland Caribou Habitat modeling were used to identify calving habitat and high quality winter habitat (Sections 3.6.1 and 3.6.2);
- The Calving Patch Identification model was developed to identify potential calving habitat (Section 3.6.3);
- Winter Habitat Model was developed to identify core winter use habitats (Section 3.6.4);
- Additional woodland caribou habitat and predictive modeling is to follow with the submission of the Supplemental Caribou Technical Report.

Core Communities – Core communities were assessed using the patch density (number of patches/km^2) on the landscape for broadleaf, coniferous, mixedwood, grassland and wetland communities.

Fragmentation - Existing Access Density and Expected Access models were created to examine the effect of fragmentation on VEC species. Refer to Bipole III Transmission project, Fragmentation Technical Report, Section 2.2 of the for further details.

Aquatics – Habitat models were not used in the aquatic environment assessment because of the highly site specific nature of potential effects (i.e., at stream intersection with right-of-way). However, one variable used in assessing fish habitat, the upstream drainage area of a stream, was calculated using a digital elevation model (DEM). Details of the procedure can be found in the Bipole III Transmission Project, Aquatic Environment Technical Report, Section 3.3.

Terrestrial Invertebrates, Amphibians and Reptiles – Habitat models were built for the selected VEC species in order to aid in the identification of potential sensitive areas within the Bipole III Transmission Project Local Study Area. Field studies targeted these areas. These models were made using information on distribution ranges, as well as known habitat requirements for feeding, reproduction and overwintering life stages. Details of these models can be found in the Bipole III Transmission Project, Terrestrial Invertebrates, Amphibians and Reptiles Technical Report, Section 3.2 and Appendix Table A1-1.

Heritage Resources – Predictive modeling for potential archaeological site locations assisted in determining areas for field investigation prior to archaeological survey. Details of the predictive model can be found in the first draft application entitled, the Bipole III Transmission Project, Heritage Resources Technical Report (Section 3.2 pp 17-18 and Appendix 3.

Date	June 7th 2012
Reference	Green House Gas Report
Source	CEC Information Request #3
Question	CEC/MH-III-041

Question:

Please explain why only 3,000 hectares (ha) of land disturbance is selected. If this is based on the width of the corridor only, then Manitoba Hydro is contradicting the methods and outcomes from previous transmission project reviews

Response:

9,017 ha of disturbed land associated with the Project was considered in the greenhouse gas (GHG) life cycle assessment which includes land areas associated with high voltage (500 kV) transmission lines, the converter stations, and the interconnecting transmission lines (230 kV). The majority of impacted areas are associated with right of way clearing activities for the transmission lines.

Out of this total area, only 3,270 ha will be permanently altered in a manner that contributes to the life cycle GHG emissions associated with the Project. Areas that are temporarily disturbed and return to an equivalent carbon stock do not contribute to long-term GHG emissions. Therefore, temporary land-use disturbances to agricultural land, developed areas, exposed land, grassland and shrubs were not included. Permanently altered areas include lands that are converted from one type of vegetation to another (such as forest to shrub) and areas that are permanently cleared (such as the foundations of the transmission towers).

Date	June 7th 2012
Reference	Aquatic species
Source	CEC Information Request #3
Question	CEC/MH-III-043a

Question:

Aquatics - It is assumed that concern over aquatic habitat for species like beaver, muskrat, mink, otter were identified in the four stages of public and community information sessions to select this preferred corridor. Please explain the lack of aquatic species in the EIS information. Beaver habitat was selected, but beaver habitat differs from that of muskrat and mink

Response:

Beaver was selected as a Valued Environmental Component (VEC) species for use in alternative route evaluation and for the effects assessment on aquatic furbearer species, including muskrat, mink and river otter. Beaver was selected as a VEC based on a number of factors, including their role as a keystone and umbrella species for other wildlife species including aquatic furbearers. As such, an understanding of beaver habitat, and concerns related to beaver are sufficient to understand the environmental conditions and potential project effects related to aquatic furbearers; all of which have a stable population in Manitoba and would not require species by species consideration for this project.

Although some differences in habitat selection and use could be argued, beaver is a suitable indicator species for most riparian habitats in the northern and central boreal forest, which includes other aquatic furbearers. Where differences in habitat use are apparent (e.g., use of marsh by muskrat in southern Manitoba), other indicators of wetland habitat such as mallard can be used as a proxy to describe the quantity and distribution of this type of muskrat habitat.

For further information, VEC processes are described in the EIS Chapter 1 Section 1.5 and the approach adopted for this project in Chapters 4 (Effects Assessment Approach) and Chapter 7 (Evaluation of Route Alternatives).

Date	June 7th 2012
Reference	CEC Information Request #3
Source	CEC Information Request #3
Question	CEC/MH-III-043b

Question:

Birds and bird habitat - Upland game birds: the two selected species seem to exhibit a southern Manitoba bias, as spruce grouse may be important to the north. Please include northern bird species and their habitat in the EIS

Response:

Ruffed grouse and sharp-tailed grouse are two of 21 bird VECs. Neither species exhibit a southern Manitoba bias as their ranges extend through much of northern Manitoba. The range of ruffed grouse extends north of Thompson (Bipole III Birds Technical Report, Map Series Part 1 Map 6) and that of sharp-tailed grouse extends along the entire proposed Bipole III route (Bipole III Birds Technical Report, Map Series Part 1 Map 7).

Northern bird communities, species and habitats that were included in the Bipole III assessment are described extensively by Ecozone and Ecoregion (See section 4.2.4 – 4.2.6: 4.3.2.2 – 4.3.2.4: Appendix D, E, Bipole III Birds Technical Report). Besides ruffed and sharp-tailed grouse, other boreal forest bird VECs included rusty blackbird, olive-sided flycatcher, and common nighthawk. While spruce grouse have some differences in their range distribution and habitat use compared to ruffed grouse and sharp-tailed grouse, species described as having similar habitat needs included American marten; a mammal species which also inhabits northern Manitoba conifer forests.

For further information on the VEC selection process please refer to response provided in *CEC/MH-III-043a*.

Date	June 7th 2012
Reference	CEC Information Request #3
Source	CEC Information Request #3
Question	CEC/MH-III-046

Question:

There is concern at the opportunistic selection of construction impacts for some species and VECs in the EIS language, leaving out long-term operation of the transmission project and subsequent impacts. Please provide EIS content that explicitly identified effects and impacts during planning, during construction, and during operation of this transmission project through the application documentation

Response:

The planning activities of the Project such as some ground-truthing, geotechnical drilling, and biophysical field surveys were considered to have negligible potential environmental effect and were not specifically assessed in the EIS.

Chapter 8 of the EIS expressly considers the construction and operation phases of the Project for the assessment of each VEC. Please refer to it for detail on potential construction and operation phase environmental effects on project VECs.

Date	June 7th 2012
Subject	Moose / Chapter 6 (6.2.6.5)
Reference	CEC Information Request #3
Question	CEC/MH-III-047

Question:

Some of the information on moose appears to be quite dated. Please provide comments on the relevance for some of the ecosystems in the study area. Reference: Chapter 6 of the EIS (6.2.6.5)

Response:

Much of the core literature on moose ecology and management is dated, but relevant in the current context. Many recent publications on moose which describe elements of moose ecology, including foraging behaviour, still rely on older publications which are often seen as indispensable 'go-to' sources. The distribution of moose is well understood as described in the EIS (Chapter 6 Section 2.6.5). See additional information below.

Moose (Section 6.2.6.5)

Moose are a common ungulate found in the prairie, boreal plain, boreal shield, taiga shield, and Hudson plain ecozones within aquatic, wetland, shrubland, deciduous forest, mixedwood forest, coniferous forest and open coniferous forest habitats (Coady 1982; Banfield 1987; Smith et al., 1998; Peek 2007). Moose are found in swamps, willow thickets, tundra and northern forests (Reid, 2006) and inhabit mixed conifer and hardwood forests which contain willows and aspen (Halfpenny, 2008). Additionally, moose are associated with riparian habitat, especially areas featuring willow, a key forage species. Moose feed on leaves and twigs, especially those of willow and aspen, as well as aquatic plants (Reid, 2006; Halfpenny, 2008). In the absence of such habitat, moose select stands that originate after fire or logging, which feature early successional

vegetation (Doerr 1983). Boan et al. (2011) found that moose were more likely to be present in naturally regenerated stands resulting from clear-cuts, than those from planted, herbicide sprayed or post-fire stands. This is a result of higher abundances of trembling aspen, white birch, willow, mountain maple, mountain ash, beaked hazel, green alder, serviceberry and pin cherry which are used for forage throughout the year (Irwin, 1985).

Courtois et al. (2002) noted that moose did not change their home range when clear-cuts were introduced, and that coarse scale selection did not change, while fine scale selection of habitat was more pronounced. Moose are commonly found in forest, shrub and wetland habitats from Red Deer Lake, north of the Porcupine Mountain area, south to areas adjacent to the Duck Mountains and Riding Mountain (Pattie and Hoffmann, 1990). Increasingly, moose are being observed in the prairie region (Manitoba Conservation, 2012).

Additional References not in EIS:

Banfield, A.W.F., 1984. The Mammals of Canada. University of Toronto Press, Toronto, Ontario. 438 pp.

Boan, J.J., B.E. McLaren and J.R. Malcolm. 2011. Influence of post-harvest silviculture on understory vegetation: Implications for forage in a multi-ungulate system. Forest Ecology and Management. 262 (9): 1704–1712

Coady, J.W. 1982. Moose (Alces alces). In Wild Mammals of North America: Biology, Management, Economics. Edited by J.A. Chapman and G.A. Feldhamer. The Johns Hopkins University Press. Baltimore, MD: 902-922.

Courtois, R., C., Dussault, F. Potvin, and G. Daigle. 2002. Habitat Selection by Moose (*Alces alces*) In Clear-Cut Landscapes. Alces. 38: 177-192.

Doerr, J.G. 1983. Home range size, movements and habitat use in two moose (Alces alces) populations in southeastern Alaska. Canadian Field-Naturalist 97:79–88.

Halfpenny, J.C. 2008. Scats and Tracks of North America: A Field Guide to the Signs of Nearly 150 Wildlife Species. Morris Books Publishing, LCC. Guilford, CT.

Irwin, L.L. 1985. Foods of moose (*Alces alces*), and white-tailed deer, (Odocoileus virginianus), on a burn in boreal forest. Canadian Field-Naturalist. 99:240–245.

Manitoba Conservation. 2012. Wild animals of Manitoba moose fact sheet [online]. http://www.gov.mb.ca/conservation/wildlife/mbsp/fs/moose.html. Accessed July 3, 2012.

Pattie, D.L. and R.S. Hoffmann. 1990. Mammals of the North American Parks and Prairies. Edmonton, AB. pp. 600

Peek, J.M. 2007. Habitat relationships. In A.W. Franzmann and C.C. Schwartz. Ecology and Management of the North American Moose, 2nd edition. Univeristy Press of Colorado. Boulder, CO. pp. 351-375.

Reid, F.A. 2006. A Field Guide to the Mammals of North America. Houghton Mifflin Harcourt. New York, N.Y.

Smith R.E., H. Veldhuis, G.F. Mills, R.G. Eilers, W.R. Fraser, and G.W. Lelyk. 1998. Terrestrial Ecozones, Ecoregions, and Ecodistricts of Manitoba, An Ecological Stratification of Manitoba's Natural Landscapes. Technical Bulletin 1998-9E. Land Resource Unit, Brandon Research Centre, Research Branch, Agriculture and Agri-Food Canada. Winnipeg, Manitoba.

Date	June 7th 2012
Reference	CEC Information Request #3
Source	CEC Information Request #3
Question	CEC/MH-III-051

Question:

There is a general assertion through the EIS that logging of forests is beneficial to moose via the creation of early successional forest for browse. However, the experience is that logging has often not been beneficial to moose in Manitoba. For example, there has been a substantial decrease in moose populations in western Manitoba coincident with the major increase in logging activity following the arrival of Louisiana-Pacific Canada Ltd. Please clarify the potential benefits to moose based on the Louisiana-Pacific case.

Response:

The effects assessment for moose considered all positive (i.e., beneficial) and adverse effects associated with the construction and operation of the Bipole III transmission line project, including that "moose habitat may become enhanced due to the presence of palatable forage species growing in the newly cleared ROW." Further considerations for the Bipole III effects assessment included a review of the potential adverse effects associated with overharvest (with increased access), sensory disturbances, functional habitat loss, predation, parasites and disease. For an overview of potential effects, please refer to Chapter 8 Section 8.2.6.2. Potential effects for moose are discussed in Chapter 8 Section 8.2.6.4 (pages 8-102-103, 8-110-111, 8-115-117, 8-121-122, 8-124-125), which includes mitigation measures used to minimize potential adverse effects. Please also refer to Table 8.2-8 for the residual environmental effects summary (Chapter 8 Section 8.2.6.5 page 131). For further details on positive and adverse effects on

moose, refer to the Mammals Technical Report (pages 76-80, 85, 86, and 90-99 and 102).

Date	June 7th 2012
Reference	CEC Information Request #3
Source	CEC Information Request #3
Question	CEC/MH-III-052

Question:

The assessment seems to focus on the impact of moose at the Local Study Area level; however, a linear development like a transmission corridor could impact beyond the Local Study Area, as many individual animals cross the line during their annual cycle of movements, and as dispersers. For example, it is almost certain that moose from the Porcupine Mountain have historically moved into GHA 14 on an annual basis (e.g., in relation to snow conditions), and as ingress. Given that the population of GHA 14 is near extirpation, that the Porcupine Mountain population has been in decline and that high levels of logging continue in the Porcupine Mountain (Cumulative Effect issue), the impact of the linear corridor on the western GHA 14 portion of the population should be considered. Given the status of the population of GHA 14/14A, assessment specific to this area should be conducted.

Response:

Assessment specific to GHA 14/14A was completed. The selection of the Final Preferred Route (FPR) through GHA 14 and 14A was based on a number of constraints and recommendations from a variety of disciplines. The FPR was a preferred option as it avoided a large proportion of the Porcupine Provincial Forest, which contains a vast area of important moose habitat.

In addition to the predictive modeling, other data used to support the assessment in GHA 14 and 14A included:

- 100 winter tracking transects (500 m in length);
- 124 summer tracking transects (500 m in length);
- 48 trail camera traps; and
- an early spring aerial survey along the FPR.

Manitoba Conservation and Water Stewardship (MCWS) has also recently highlighted its concerns in this area through the TAC process for review of the Bipole III EIS. MCWS has stated that recent survey information for the GHA 14/14a indicates a large decline in local moose population.

Manitoba Hydro is coordinating a meeting with Manitoba Wildlife Branch biologists shortly, to discuss the moose issue in this area and potential mitigation.

Date	June 7th 2012
Reference	CEC Information Request #3
Source	CEC Information Request #3
Question	CEC/MH-III-053a

Question:

The EIS lists potential impacts from construction of the converter stations:

1) insulator oil leakage;

Please clearly quantify and specify the potential impacts for each station in planning, construction, and operation stages.

Response:

The converter station's 14 transformers are filled with a total of approximately 115,000 litres of insulating oil, this is the maximum amount that could be released from a converter station transformer during construction or operation. There is no potential for leakage during the planning stages.

The following measures will be put in place to reduce the risk to the environment:

- Oil containment system as outlined in Section 3.5.2.1; and
- A spill response plan will be developed for each individual site and spill response materials will be available on each site.

The potential impacts to the environment without the measures outlined above would be potential contamination of the surrounding environment (land or water). However with the measures noted above, the risk is considered very low.

Date	June 7 2012
Reference	Construction – Converter Station/Protection (EPP)
Source	CEC Information Request #3
Question	CEC-MH-III-053b

Question:

The EIS lists potential impacts from construction of the converter stations:

b. coke leachate from ground;

Please clearly quantify and specify the potential impacts for each station in planning, construction, and operation stages.

Response:

Response was provided to Manitoba Conservation and Water Stewardship (MCWS/MH-TAC-005e)

Based on the available data and planned mitigation measures reviewed during the development of the Technical Report on Groundwater for the Bipole III Transmission Project, there are no anticipated residual effects to groundwater from the coke bedding material for the ground electrodes.

At the preferred southern electrode site, there is limited concern for the entry of contaminants to the potable aquifer due to (1) a 10 to 20 m clay layer that underlies the site and acts as a barrier and (2) an apparent upward hydraulic gradient the offers further protection against the downward migration of contaminants from the surface to the aquifer (Rutulis 1990).

At the northern electrode site, the potable bedrock aquifer is covered by approximately 60 to 80 metres of till overburden, which provides good protection to the underlying bedrock aquifer from downward migration of leachate (KGS Acres Ltd. 2008). There is,

however, potential that leachate will migrate downwards from the surface at this site, reach the low permeability till layer, migrate laterally to the east and seep out on the Nelson river bank, potentially reaching an aquatic receptor. A dilution will occur in this situation reducing the potential effect to the aquatic environment, according to the analysis presented below.

The analysis considered a dilution of coke leachate by only co-infiltrating un-impacted water during subsurface movement. In this desktop calculation, the following assumptions were made:

- Leachate volume has only been diluted with infiltration percolating inside of the area of the electrode ring (i.e., upstream and downstream infiltration not considered [adds conservatism].
- The infiltration volume is linearly proportional to the area of infiltration.
- Complete mixing of the leachate and co-infiltrating un-impacted water occurs.
- Coke leachate assumed to have contaminants of concern in concentrations presented in Table 1. The concentrations were obtained from literature data due to lack of site-specific tests (Puttaswamy *et al.* 2010).

Dilution was calculated from dimensions of electrode ring and the coke bed as follows:

Dilution factor = 2,009,600 m^2 (area inside the ring)/3,013 m^2 (coke bed area) = 667x

The leachate concentration was divided by this dilution factor to calculate the concentration in the seepage, which was compared to the guidelines and results of toxicity tests (Table 1). The resulting contaminant concentrations in the seepage are at least two orders of magnitude lower than any CCME Guideline for Freshwater Aquatic Life or 7-day LC_{50} for *Ceriodaphnia dubia* reported by Puttaswamy *et al.* (2010). Therefore, the effect of contaminant leaching from the coke to the aquatic environment was not considered to present a potential residual environmental effect.

The following mitigation activities will be conducted to minimize or preclude impairment of groundwater quality at the ground electrode sites and associate lines right-of-way:

- Ground electrode irrigation will only be conducted during dry soil conditions and in amounts not exceeding what is required to maintain saturated soil conditions, to reduce the potential for leaching.
- The coke material will be tested (e.g. leachate analysis) prior to use, for potential contaminants and the need for monitoring based on the results.

Table 1. Concentrations of elements of concern (µg/L).

Element	Leachate concentrations*		Seepage concentrations		Guidelines CCME FAL**	7-d LC_{50}*
	Average	St. error	Average	St. error		
Al	10	5	0.01	0.01	100	497
B	600	77	0.90	0.11	ND	45500
Ba	26	11	0.04	0.02	ND	ND
Mn	136	87	0.20	0.13	ND	12810
Mo	2420	647	3.63	0.97	73	19700
Ni	32	18	0.05	0.03	56	3.8
Sr	360	129	0.54	0.19	ND	ND
V	4126	2817	6.19	4.22	ND	550
Zn	37	35	0.06	0.05	30	165

ND = guideline is not determined.

* Puttaswamy et al. (2010) Table 2

** Canadian Council of Ministers of the Environment Guidelines for Freshwater Aquatic Life

References:

Rutulis, M. 1990. Groundwater resources in the Rural Municipality of Springfield, Manitoba Natural Resources. Water Resources Branch, Winnipeg.

KGS Acres Ltd. 2008. Conawapa Generating Station – Axis B. Recommitment Studies. Project Status Update (Stage IV Studies). Construction Camp Water Supply. File No. 00192-11624-0006.

Puttaswamy, N., Turcotte, D., Liber, K. (2010) Variation in toxicity response of *Ceriodaphnia dubia* to Athabasca oil sands coke leachates. *Chemosphere*, Vol. 80, pp. 489–497

Canadian Council of Ministers of the Environment (CCME). 1999. Canadian Environmental Quality Guidelines for the Protection of Environmental and Human Health. Report ISBN 1-896997-34-1. Publication No. 1299. Winnipeg, Manitoba. (Updated periodically, see: http://ceqg-rcqe.ccme.ca/).

Date	June 7th 2012
Subject	Construction – Converter Station/Protection (EPP)
Reference	CEC Information Request #3
Question	CEC/MH-III-053c

Question:

The EIS lists potential impacts from construction of the converter stations:

c. leak of gases from sealed insulators, etc.;

Please clearly quantify and specify the potential impacts for each station in planning, construction, and operation stages.

Response:

It is estimated that approximately 3590 kg of Sulphur hexafluoride (SF_6) insulating gas will be used in circuit breakers and other high voltage electrical apparatus at the Keewatinoow and Riel converter stations.

As stated in Chapter 8 of the EIS, there is the potential for accidental release of electrical insulating gases during converter station operation and maintenance. SF_6 is a greenhouse gas; therefore if a release occurs, the greenhouse gas emissions for the project would increase. To reduce the potential effects on the environment from an accidental release, the SF_6 is contained within hermetically-sealed containers that are inspected regularly. Manitoba Hydro will manage equipment operation and the decommissioning of old equipment using proper handling and recycling procedures so that there is minimal opportunity for gas to be released into the environment. The consequence of this event would be minor and with the measures outlined above the risk to the environment is considered very low.

Date	June 7th 2012
Subject	Construction – Converter Station/Protection (EPP)
Reference	CEC Information Request #3
Question	CEC/MH-III-053d

Question:

The EIS lists potential impacts from construction of the converter stations:

d. risk of fire at converter stations

Please clearly quantify and specify the potential impacts for each station in planning, construction, and operation stages.

Response:

The Keewatinoow and Riel converter stations will be designed and operated in accordance with Manitoba Hydro's Fire Manual. If a fire develops at one of the stations during construction or operation, there would a minor effect to air quality until the fire is extinguished.

The following measures will be put in place to reduce the risk to the environment:

- the converter station is designed to minimize the spread of fire, this reduces outage time and increases system availability; and
- fire suppression system as outlined in Section 3.5.2.1.

Date	June 7th 2012
Reference	Technical Report
Source	CEC Information Request #3
Question	CEC/MH-III-054a

Question:

Please explain why the EIS has failed to demonstrate that it has appropriately considered embedded carbon dioxide and equivalents or any other parameter as a measure of environmental impact over the useful life of the project.

a. The analysis presented in this technical report showed that, of the 923,273 tonnes of carbon dioxide and equivalents generated over the assumed 50-year life of the Bipole III Project, 82.4% of that total will be generated by the transmission line and 17.6% by the termini (converter stations and the ground electrodes). The analysis showed that the construction phase accounts for 56% of the total, the operation phase accounts for 41% of the total (consisting of land use change at 33% and operation and maintenance at 8%) and the decommissioning phase accounts for 3% of the total. But the study showed that a different assumption about the impact of land use change would have increased the total emissions by a significant 38%. There is also no mention of life cycle analysis in the EIS itself, none using embedded carbon dioxide and equivalents and none using any other measure of lifetime environmental impact. Please reconcile these issues.

Response:

The EIS has considered all of the significant contributing factors throughout the life of the Project. The EIS, specifically Section 8.2.2.4: Environmental Effects Assessment and

Mitigation, discusses the greenhouse gas (GHG) life cycle assessment approach and presents the key results that also appear in the technical report.

The life cycle assessment considered and included the embedded carbon dioxide within the analysis. For example, the construction phase included all GHG emissions due to construction activities, equipment operation and included GHG emissions from raw material extraction, production and transportation activities associated with construction components such as the steel towers and aluminum conductors.

The land-use change contribution to the life cycle GHG emissions was determined based on the difference in carbon content between the original and the resulting vegetation. While the objective was to produce the best estimate of the lifecycle GHG implications, in several instances conservative assumptions were made. For example, all biomass cleared was assumed to be combusted during time of clearing, none was assumed to be salvaged or reclaimed. Actual practice will strive to reclaim or sell salvaged timber.

To understand the implications related to the uncertainty related to possible carbon contents, Pembina Institute also completed a sensitivity analysis to high carbon content assumptions. Under this sensitivity the overall life cycle emissions increased by 39%. Although as a percentage this is significant, the absolute value of the change of emissions demonstrated that even under very conservative assumptions, the overall life cycle GHG emissions associated with the Project remain modest in magnitude.

Date	June 7th 2012
Reference	Technical Report (Climate Change)
Source	CEC Information Request #3
Question	CEC-MH-III-054b

Question:

Please explain why the EIS has failed to demonstrate that it has appropriately considered embedded carbon dioxide and equivalents or any other parameter as a measure of environmental impact over the useful life of the project.

b. Were the findings in the technical report that showed how sensitive the analysis was to assumptions sufficient to cause the analysis to be disregarded? Was the analysis disregarded because of the decision in the analysis not to attribute to the Bipole III transmission line any value to the embedded carbon dioxide and equivalents associated with the generation of the large amount of power with such a long transmission line that will be lost as heat to the atmosphere along the line and that will not serve any beneficial use? Was the failure to consider the contribution to embedded carbon dioxide and equivalents from additional energy consumed (fertilizer, crop protection chemicals, fuel) as a result of changed agricultural operations around towers the reason that the findings of the technical report are not mentioned in the EIS?

Response:

The sensitivity analysis was included in the final technical report to demonstrate and understand the implications on the range of selected key assumptions. The most significant finding was that high range carbon content assumptions for land use change emission can increase overall life cycle emissions by 39%. Although as a percentage

this is significant, the absolute value of the change of emissions demonstrated that even under very conservative assumptions, the overall life cycle GHG emissions associated with the Project remain modest in magnitude.

As presented in the technical report, life cycle assessment considerations of transmission line losses are incorporated into the analyses for the new generation projects. Inclusion in the analysis for the Project would result in double counting of the associated GHG emissions.

As discussed in the EIS in Section 8.3.1.3 Environmental Effects Assessment and Mitigation, the route selection process for the line sought to minimize the impact of the line on agricultural land. Based on comments provided by landowners, Manitoba Hydro altered the alignment of the preferred route for the Bipole III line to minimize potential impacts. The final preferred route, compared to the alternatives, crosses the least amount of intensively farmed land, is the shortest in length and tower placement has the lowest impact on agriculture. From a greenhouse gas life cycle perspective, the agricultural practice impacts are not deemed significant. Further they are site specific and dependent on individual farming practices.

Date	June 7th 2012
Reference	Technical Report - Climate Change
Source	CEC Information Request #3
Question	CEC/MH-III-054c

Question:

Please explain why the EIS has failed to demonstrate that it has appropriately considered embedded carbon dioxide and equivalents or any other parameter as a measure of environmental impact over the useful life of the project.

c. The technical report is ambiguous on the matter of which of the standard sources of embedded carbon dioxide and equivalents were considered in the analysis and which were not. The lumping together in Appendix 4 of the report of both activities "not calculated" and activities "included in other activities" makes it impossible to determine if an activity has been considered or not. Please provide a full analysis of embedded carbon dioxide and equivalents.

Response:

Table 5 in Appendix 4 of the greenhouse gas life cycle assessment is intended to provide a summary of the results by activity level. Appendix 2 provides the details necessary to distinguish explicitly which activities have been included and provides rationale if any activities are excluded. The activity mapping completed in Appendix 2 demonstrates schematically how construction, operation and decommissioning activities have been itemized and organized for the analysis. Each of these project activities are described in detail in Table 2 within Appendix 2. Table 2 provides a description of the activity, inclusion assumption, and the rationale for inclusion or removal from consideration.

Date	June 7th 2012
Reference	Technical Report - Climate Change
Source	CEC Information Request #3
Question	CEC/MH-III-054d

Question:

Please explain why the EIS has failed to demonstrate that it has appropriately considered embedded carbon dioxide and equivalents or any other parameter as a measure of environmental impact over the useful life of the project.

d. The EIS needs to identify which, if any, of the conclusions of the technical report were accepted and which were not. Of the conclusions that were accepted, it needs to show how these conclusions influenced the choices made. If no conclusions were accepted, the EIS needs to explain why another technical review of embedded carbon dioxide and equivalents or of some other measure of environmental impact over the life of the Project was not performed or commissioned.

Response:

All of the conclusions within the technical report were accepted. The primary conclusions of the greenhouse gas (GHG) life cycle assessment were the total life cycle GHG emissions, the distribution of life cycle emissions in activity categories and Project stages, and the sensitivity of the results to changes in assumptions (particularly on the land change assumptions).

Manitoba Hydro has accepted this technical report prepared by The Pembina Institute and the EIS directly uses the data and information provided in the conclusions of the technical report. This information was used to understand and explain the overall emissions, the activities and practices contributing to them.

Date	June 7th 2012
Reference	Chapter 6 – Section 6.3.1.5
Source	CEC Information Request #3
Question	CEC/MH-III-054e

Question:

Please explain why the EIS has failed to demonstrate that it has appropriately considered embedded carbon dioxide and equivalents or any other parameter as a measure of environmental impact over the useful life of the project.

e. There is an existing UNESCO designated area in Manitoba, the Riding Mountain Biosphere Reserve. Although this area is not traversed by the final preferred route (missing it at two locations by a mere 10 km and 15 km), the area lies squarely within the Project study area. Certainly, the area would have been traversed by all of the alternative routes that were considered before the final preferred route was chosen. Section 6.3.1.5 of Chapter 6 has a subsection dealing with ecological reserves. It lists seven ecological reserves that fall within the Project study area. The UNESCO-designated Riding Mountain Biosphere Reserve is not one of them. The map for Block 05 of Map Series 6-2800 in the EIS presents the area in which the Riding Mountain Biosphere Reserve exists. But this UNESCO-designated area is not shown on this map. Considering that the UNESCO-designated Riding Mountain Biosphere Reserve was not considered in the planning of the Bipole III Project, was it just a circumstance or a stroke of luck, that the final preferred route for the Bipole III line misses the UNESCO-designated area?

Response:

The Riding Mountain Biosphere Reserve (RMBR) is located within the project study area and is clearly shown on the map for Block 5 of Map Series 6-2900 "Conservation Lands" in the EIS. Section 6.3.1.5 of Chapter 6: Existing Environment has a subsection on Federal designated lands that specifically discusses the RMBR, noting its relationship to the national park. A "Biosphere Reserve" is a designation of recognition from UNESCO for an area that demonstrates a "balanced relationship between humans and the biosphere". The Biosphere Reserve does not have any law-making or land use changing powers. Furthermore, UNESCO has no authority or regulatory powers within a Biosphere Reserve. Rather, voluntary initiatives are promoted with the main goal being to seek a balance between conservation of natural and cultural heritage and sustainable economic development (http://rmbr.ca/info/about/).

The RMBR is not an ecological reserve as implied. Manitoba's Protected Areas Initiative lists the ecological reserves that are part of Manitoba's protected areas network which are owned by the Province of Manitoba and are managed by Manitoba Conservation. Ecological Reserves are established under *The Ecological Reserves Act* and are permanently protected. The RMBR consists of two components, the protected core which is Riding Mountain National Park (RMNP) itself, and a zone of cooperation made up of 15 surrounding rural municipalities. This surrounding area is largely developed for agriculture, including grain/forage crops and livestock production, and is where people live and work. The RMBR functions as a non-profit organization that is managed by a committee of area residents appointed by municipal council and supported by Parks Canada and Provincial government program staff. The RMBR is intended to foster and encourage a sustainable, community-based regional economy with high biodiversity, landscape and social values associated with the national park.

The RMBR was considered in the planning of the Bipole III Project. Identification of alternative routes commenced with the characterization of routing features and constraints as part of the environmental setting for the Project study area and included input on routing features/constraints received during Rounds 1 and 2 of the Environmental Assessment Consultation Program (EACP). This information assisted in

narrowing down the areas where alternative routes could be identified in the Project study area. Of the three “main” alternative routes identified (Alternatives A, B and C), two of the alternatives (Alternatives A and C) crossed through the RMBR, specifically the zone of cooperation area while avoiding the protected core area (RMNP). The preliminary evaluation of Alternative Routes A, B and C considered numerous regional features / constraints in terms of avoidance and routing opportunities and also reflected technical and cost considerations. The EA study team subsequently refined and synthesized the three main alternative routes through consideration of all biophysical and socio-economic regional siting features leading to the identification of a preliminary preferred and selection of a final preferred route, and included feedback received in the course of Rounds 3 and 4 of the EACP. The final preferred route selected for Bipole III avoids crossing through the RMBR, specifically the zone of cooperation, as a result of the application of the alternative route identification, evaluation and selection process.

Date	June 7th 2012
Reference	Chapter 1, Section 1.3.1
Source	CEC Information Request #3
Question	CEC/MH-III-057

Question:

A convincing case has not been made that Manitoba Hydro has respected its mandate to promote economy and efficiency in conceiving the Bipole III Project and that the choices made satisfy the first principle of sustainable development. As affirmed in Section 1.3.1 of Chapter 1, "Manitoba Hydro's mandate is to supply power adequate for the needs of the Province of Manitoba and to promote economy and efficiency in the development, generation, transmission, distribution, supply and end-use of power". These are also the words used in the Manitoba Hydro Act. Please provide evidence that reflects Manitoba's first principle of sustainable development

Response:

As stated in Manitoba Hydro's Sustainable Development Guiding Principles, the first principle is stewardship of the economy and environment:

> "… as a caretaker of the economy and the environment for the benefit of present and future generations of Manitobans.
>
> Meet the electricity needs of present and future Manitobans in a manner that ensures the long-term integrity and productivity of our economy, our environment, our natural resources and safeguards our human health."

http://www.hydro.mb.ca/environment/policy/sdp.shtml

Manitoba Hydro is committed to the incorporation of sustainability into all aspects of its operations to achieve environmentally sound and sustainable economic development. Through its decisions and actions to provide electrical services, Manitoba Hydro strives to meet the needs of the present without compromising the ability of future generations to meet their needs. Chapter 10 of the Environmental Impact Statement is dedicated to the discussion on the sustainability assessment undertaken for the Project.

Regarding the provision of electricity to Manitobans, the existing transmission system is vulnerable to the risk of catastrophic outage if both Bipole lines and/or the Dorsey Converter Station are damaged due to severe weather events, fire or sabotage. System reliability studies have concluded that the likelihood of such events occurring, when combined with severe consequences of prolonged major outages, warrant substantial system improvements to reduce dependence on Bipoles I and II and the Dorsey Station. The potential effects of such an event could have serious consequences to the health, safety and security of Manitobans. As discussed in response *CEC/MH-II-023* a one-year outage at Dorsey converter station, could result in societal costs of $20 billion (based on an estimate of $10/kwh). The Project will reduce dependence on the existing Bipole I and II transmission lines and the Dorsey Station to ensure that a reliable supply of electricity is accessible to Manitobans today as well as to future generations.

Date	June 7th 2012
Reference	Chapter 8, Sections 8.3.1.3 and Section 8.3.5.3
Source	CEC Information Request #3
Question	CEC/MH-III-060

Question:

During the Environmental Assessment Consultation Program (EACP), landowners questioned whether electromagnetic fields from the conductors of the Bipole III transmission line would interfere with GPS signals and decrease their efficiency. The EIS contains lengthy sections on surveys of wildlife undertaken by aircraft that were not controlled by GPS. There is little discussion in the EIS on the use of GPS in agriculture. The EIS suggests that it is unlikely (Section 8.3.5.3 in Chapter 8, page 8-322) that the Bipole III line will interfere with GPS functioning. However, there could be a temporary interruption of the signal received by moving equipment resulting from interference by a tower. Earlier, (Section 8.3.1.3 in Chapter 8, page 8-236), the EIS notes that a transmission line can restrict aerial spraying patterns.

Response:

A concern expressed during the Environmental Assessment Consultation Program (EACP) by landowners was whether electromagnetic fields from the conductors of the Bipole III transmission line would interfere with GPS (Global Position Systems) and decrease their efficiency. Due to this concern, Manitoba Hydro commissioned two studies by independent surveyors using various types of GPS technologies directly beneath the two existing Bipole I and II dc transmission lines located in Manitoba's Interlake region [See Bipole III Transmission Project Electromagnetic fields (EMF) technical report for both studies – Pollock and Wright 2010 and Plan Group 2011]. As noted on Page 41 of the EMF technical report that summarizes the results of the studies, the tests showed no interference with any type of GPS or Global Navigation Satellite

System (GNSS) technology tested, including RTK and other correction systems. The GPS receivers tested continued to operation without interruption at centimeter accuracies regardless of the presence of the dc transmission lines. In theory, the presence of the transmission towers themselves might occasionally attenuate satellite signals related to GPS systems (as do trees), but this was not observed during the testing. A GPS receiver makes use of multiple satellites in determining its position and so the loss of one or even two of the signals will not normally result in a loss of function of the GPS system. Furthermore, a limited series of measurements under a nearby 230-kv ac transmission also did not affect the performance of the GPS receivers.

Regarding the comment in section 8.3.1.3 in Chapter 8, page 8-236, on “restricted spraying”, this comment is in relation to the physical presence of the line and not GPS use. The presence and configuration of towers can make aerial navigation more challenging; as well, aerial applicators stay a safe distance from conductors and towers and, therefore they restrict aerial application in particular locations.

Date	June 7th 2012
Reference	CEC Information Request # 3
Source	CEC Information Request # 3
Question	CEC/MH-III-067

Question:

Please provide detailed information concerning Manitoba Metis rights and interests in the Project Study Area and fully describe the nature and extent of Manitoba Metis use of land and resources in the Project Study Area and project component local study areas so that regulatory agencies charged with reviewing the BP3 application are fully apprised of the baseline conditions with respect to Manitoba Metis.

Response:

It is not appropriate for Manitoba Hydro to comment on Metis legal rights and interests in the Project Study Area. However, with respect to use of the land and resources, Manitoba Hydro provided funding to the Manitoba Metis Federation (MMF) to undertake a traditional land use and knowledge study related to the Bipole III Transmission Project. The objectives of the Metis Traditional Knowledge Study included: documentation of the traditional and contemporary Metis uses of lands and waters, as well as documentation of traditional knowledge and uses of plants and animal species in the Bipole III Study Area. The final report related to this work was attached to the EIS in its entirety. Summaries of the MMF report were included in Chapter 5 of the EIS as well as in the Aboriginal Traditional Knowledge Technical Report #2. The final report included information regarding seasonal activities, the types of species harvested, the consumption of country foods, harvesting practices, the process of learning about the land, the amount of time spent on the land, and the ways in which Metis people access their areas of use.

The report indicates that fall is the most important season to harvest large and small animals, while summer and winter are the most important seasons for fishing. In general the individuals interviewed indicated that they began engaging in traditional activities in the company of their parents, siblings, and extended family, and that these family members were integral to their learning about the land itself as well as the use of the land. The average number of days per year each Interviewee spent engaged in traditional activities in the Project Study Area was 49 days. Half of those interviewed reported that they spent more than 24 days per year harvesting in the Project Study Area. The Stephens Lake area was referenced as an area of concern for Caribou. The central portion of the Project Study Area is where the majority of the interviewees indicated that they harvest moose, deer and elk. In general the study found that the Porcupine and Duck Mountain areas of the province were particularly high areas of use for the individuals interviewed.

With regards to cultural sites, the report identifies a number of ceremonial, burial or other sacred and spiritual places. However, the report indicates that the majority of these sites were located outside the Project Study Area.

In addition to the above work undertaken by the MMF, Manitoba Hydro also engaged 19 communities in Aboriginal Traditional Knowledge (ATK) Workshops. Eight of the communities who participated in the ATK workshops are home to MMF locals and are generally understood to have a Metis component to their populations. These include: Cormorant, Thicket Portage, Barrows, Baden, Camperville, Duck Bay, Pelican Rapids, and Red Deer Lake.

Areas identified by these eight communities included Duck Mountain and Porcupine Mountains for harvesting and hunting activities; the Red Deer River Crossing as an area of intensive resource use and which is also close to archeological sites; Cowan/Briggs Spur and Kettle Hills area for blueberry harvesting but also for kinship and social activities and as an area of high cultural significance; the area north and west of Thicket Portage as an area important for animals; the area north and west of Pikwitonei as area

of importance for fish spawning as well as plant use; and areas in the vicinity of Cormorant for trapping. While other areas were identified, these areas were specific places that were referenced, sometimes by several communities, as being of particular importance.

Date	June 7th 2012
Reference	CEC Information Request #3
Source	CEC Information Request #3
Question	CEC/MH-III-068

Question:

MH indicates a Draft Access Management Plan will be prepared to control access to construction areas for the Project the scope of which, in part, will [emphasis added]:

- include security of construction sites and facilities, safety of construction workers and the general public, respect for Aboriginal rights and resource users, and protection of natural, cultural and heritage resources;
- ensure worker and public safety;
- provide for security of Manitoba Hydro properties and facilities, and safe access to or through construction areas for authorized employees, land and resource users, and research and monitoring personnel;

Response:

Access Management Plans (AMP) are currently being prepared and will address the above mentioned requirements.

Date	June 7th 2012
Reference	CEC Information Request #3
Source	CEC Information Request #3
Question	CEC-MH-III-069

Question:

Please outline security requirements including terms and conditions for access, restrictions on firearms, hunting and fishing, and other resource use activities; be provided for review by affected stakeholders including government departments, First Nations, Aboriginal communities, rural municipalities, environmental organizations and land owners.

Response:

As part of four rounds of public engagement, biophysical and socio-economic studies, and Traditional Knowledge studies, numerous concerns regarding potential access restrictions and increased access opportunities were expressed by a wide range of stakeholders. In response, Manitoba Hydro is preparing access management plans that address these concerns. Manitoba Hydro anticipates that anyone living in construction camps will be prohibited from bringing weapons into the camp.

Manitoba Hydro's principal concern is human safety on the project. This concern includes the entire construction site (the project footprint) and extends to the access roads/trails that will be used to transport materials and workers to the site.

With respect to the transmission line Access Management Plan, Manitoba Hydro will not impose access restrictions on any existing access roads/trails to traditional users, except as may be required temporarily for safety purposes. Manitoba Hydro will restrict non-project related traffic at the construction site for reasons of safety. Manitoba Hydro will not restrict traditional use/harvest of resources (e.g. trapping) except as it may pertain

to access on the project footprint for reasons of worker and resource user safety. All project workers will not be allowed to hunt or fish at the construction site. For reasons of safety and at the direction of the Minister of Manitoba Conservation and Water Stewardship, the construction site and approaches to it, may be posted with no hunting signs.

Date	June 7th 2012
Reference	CEC Information Request # 3
Source	CEC Information Request # 3
Question	CEC/MH-III-084

Question:

Please provide information about how MH will consult about access arrangements with Manitoba Metis who are not "in the vicinity of the project" but whom use the lands and resources for traditional purposes.

Response:

Manitoba Hydro has indicated an interest in meeting with the MMF. These discussions could include access arrangements.

Date	June 7th 2012
Reference	CEC Information Request # 3
Source	CEC Information Request # 3
Question	CEC/MH-III-085

Question:

Please provide information on any MH and/or Manitoba restrictions, if any, concerning hunting implemented in the vicinity of other project converter stations both during construction and operational phases. If there were restrictions, please provide details concerning the geographic extent and nature of the restrictions.

Response:

During construction, hunting will be restricted while project staff are working on the project sites. The geographic extent includes the project site and restrictions include all forms of hunting. Manitoba Hydro anticipates that anyone living in construction camps will be prohibited from bringing weapons into the camp.

During operation, hunting restrictions will be the responsibility of Manitoba Conservation and Water Stewardship.

Date	June 7th 2012
Reference	CEC Information Request # 3
Source	CEC Information Request # 3
Question	CEC/MH-III-086

Question:

Please explain if MH and/or Manitoba anticipate employing similar management measures for the converter stations associated with the BP III project.

Response:

Yes this is anticipated.

Date	June 7th 2012
Reference	CEC Information Request # 3
Source	CEC Information Request # 3
Question	CEC/MH-III-087

Question:

Has MH monitored impacts on plant gathering by Aboriginal harvesters within existing transmission line rights-of-way, and if so, how does this information inform the conclusions made about the significance of impacts on traditional plant gathering?

Response:

Manitoba Hydro has not monitored the impacts on plant gathering by Aboriginal harvesters within existing transmission line rights-of-way. Manitoba Hydro acknowledges the importance of traditional plant gatherings to Aboriginal peoples. As per Appendix H of the Bipole III Draft Environmental Protection Plan, a number of sample plots will be established during pre-construction to identify any changes in plant community composition and productivity post-construction.

Date	June 7th 2012
Reference	CEC Information Request # 3
Source	CEC Information Request # 3
Question	CEC/MH-III-088

Question:

Has MH investigated non-chemical options for ROW maintenance, and if so, what are these options? Has MH employed non-chemical options for ROW maintenance on other existing transmission lines as a means of mitigating impacts on traditional gathering activity?

Response:

Mechanical mowing is a non-chemical option for ROW maintenance, which Manitoba Hydro does utilize in some areas. Mechanical mowing does increase the number of trees on the ROW. Deciduous trees will re-sprout prolifically from the roots and stumps, resulting in an ever increasing need for maintenance in terms of both area and frequency.

Date	June 7th 2012
Reference	CEC Information Request # 3
Source	CEC Information Request # 3
Question	CEC/MH-III-098

Question:

Please provide detailed information concerning Manitoba Metis archaeological heritage and potential archaeological sites with Metis material culture in the study area, including areas where heritage resources may be impacted by project activity.

Response:

During the Aboriginal Traditional Knowledge (ATK) interviews with the various communities, cultural affiliation of the interviewees was not requested. However, some interviewees did identify themselves as Metis. The knowledge and historical narrative that was provided by these interviewees identified location and site type. The cultural importance of certain areas was shared and these areas were noted as environmentally sensitive sites (ESS). Recommendation for avoidance of these culturally sensitive areas was taken into account during the selection of the final preferred route (FPR) and areas that had been identified were avoided. Much of the land of the FPR is privately owned and the archaeological study team did not have permission to access private lands. Only Crown Lands were accessible. No specific tangible elements of Metis material culture, such as settlement patterns and artifact assemblages were identified during the field studies.

Potential Metis archaeological heritage and potential archaeological sites with Metis material culture in the Bipole III Study Area, including areas where heritage resources may be impacted by project activity were studied as part of the requirements of permits since all archaeological sites are identified and registered with the Province of Manitoba.

In Manitoba, all heritage resources regardless of cultural affiliation are protected by *The Heritage Resources Act* (1986) (Please refer to the list of definitions on page 1 of The Act, Part II Section 12(1) and Part IV Section 43 (1) for further detail). In the Manitoba Guide to Completing the Archaeological Site Inventory Form (Badertscher 1989) heritage resources sites are identified by site type based on physical site features (camp, work station, burial, etc.) and cultural affiliation when possible. Because all heritage resources are protected by *The Act* all heritage resources are considered to be Valued Environmental Components (VEC). All sites are treated equally and are subject to the same reporting. Found human remains are additionally protected by Manitoba's Policy Concerning the Reporting, Exhumation and Reburial of Found Human Remains (1987).

The main purpose of a Heritage Resources Impact Assessment (HRIA) is to identify the presence of heritage resources, determine the effects of impact that a project may have on identified heritage resources sites and provide practical mitigative measures. Additionally, the Heritage Resources Protection Plan (HRPP) provides a proactive process for the protection of undiscovered sites that may be unearthed during the construction and operation phases.

Archaeological site data is first divided into Pre- and Post-European Contact. This is a high level step for sorting out the range of heritage resources that could be encountered during HRIA field investigations. The HRIA process is most concerned with the presence/absence of heritage resources and avoidance of same.

The Bipole III Study Area was initially examined for its physical characteristics that suggested certain types of human activities, for example, similar to today, there are landscape features that work together to provide the best location for campsites/settlements (slope, nearness to water, view). The archaeological record indicates that ancient and historic people used a similar decision-making formula in determining habitation sites. Moreover, the archaeological record illustrates an active, ancient trade network that persisted well into the historic period and which was adapted by the newcomers (European explorers/fur traders). The historical record (including Metis specific information contained in the Hudson's Bay Company Archives, St. Boniface Bishop's Archives, and pertinent publications) provided a reference point for the

movement and settlement of post-European contact people; this included archival, published and unpublished sources.

Date	June 7th 2012
Reference	CEC Information Request # 3
Source	CEC Information Request # 3
Question	CEC/MH-III-100

Question:

Why was the predictive model not inclusive of Metis settlement patterns and landscape use?

Response:

The predictive model was not based on particular settlement patterns. The model was based on ten physical attributes in order to select areas of high, medium and low potential for archaeological site. This was completed once the preferred route was selected in order to identify areas for site presence or absence. The predictive model is but one tool that is used prior to archaeological field investigations.

Prior to the development of the model the existing heritage record was plotted in GIS along with the alternative routes. Heritage sites were ranked during this process. The valuation process identified route and route segments that contained the lowest value.

Sites that were identified through the ATK (Aboriginal Traditional Knowledge) studies were marked for avoidance and so did not require field investigation.

Date	June 7th 2012
Reference	CEC Information Request # 3
Source	CEC Information Request # 3
Question	CEC/MH-III-101

Question:

Please describe the process whereby the MMF will be consulted on unknown Metis heritage resources that may be discovered during the course of the project, including Metis burial sites

Response:

The Bipole III Heritage Resources Protection Plan (HRPP) will establish a protocol for contacting and working with the MMF regarding any unknown Metis heritage resources that may be discovered during the course of the project, including Metis burial sites. Manitoba's *Heritage Resources Act* (1986) and the Policy Concerning the Reporting, Exhumation and Reburial of Found Human Remains (1987) determine the process of investigation for burials. Should human remains be identified during construction of the Bipole III transmission line the following essential best practice occurs:

1. Unless unavoidable and necessary human remains are not to be removed from their original resting place;
2. When human remains are discovered a) all work ceases and the Historic Resources Branch of Manitoba Culture, Heritage and Tourism is notified immediately; b) no further disturbance of the remains occurs until the arrival of personnel designated by the Historic Resources Branch;
3. Community consultation takes place before exhumation or removal of human remains or associated grave goods;
4. Personnel designated by the Historic Resources Branch shall carry out the exhumation, and as much as possible, out of the public eye;

5. Identification procedures will be undertaken only by personnel designated by the Historic Resources Branch;
6. Reburial of human remains when a First Nation is involved is arranged by the Aboriginal Liaison Officer of the historic Resources Branch in conjunction with the community. Reburial in all other cases will be handled only by personnel designated by the Historic Resources Branch. (n.d. Manitoba Pamphlet, copy attached).

Date	June 7th 2012
Reference	CEC Information Request # 3
Source	CEC Information Request # 3
Question	CEC/MH-III-103

Question:

It is stated that feedback from local consultation activities were used to help in determining route and site selections. Were environmental experts and local naturalists consulted? Were any of the Key Persons familiar with the ecological environment?

Response:

Were environmental experts and local naturalists consulted?

Yes. Manitoba Hydro developed an Environmental Assessment Consultation Program (EACP) which would elicit feedback from a variety of stakeholders and the public. Project notification letters and open house notification methods were utilized to inform stakeholders and the public of the Project and methods in which they could provide feedback.

Throughout each Round of the EACP direct letters were sent to environmental groups throughout the province.. A number of environment and conservation grous were notified of all consultation opportunites throughout each round of the EACP and meetings were held wqith those who wished to do so. Input received from these groups was incorporated and considered in routing decisions. The following organizations were contacted during the EACP;

- Ducks Unlimited Canada;
- Manitoba Habitat Heritage Corporation;
- Riding Mountain Biosphere Reserve;

- Nature Conservancy of Canada;
- Boreal Forest Network;
- Manitoba Eco Network;
- Canadian Parks and Wilderness Society;
- Manitoba Naturalists Society;
- Manitoba Wildlands;
- Manitoba Wildlife Federation; and
- TREE – University of Winnipeg.

Were any of the Key Persons familiar with the ecological environment?

Not necessarily. The Key Person Interview process was undertaken to collect information in regards to the socio-economic landscape and not targeted towards individuals with an ecological background. Questions asked throughout the Key Peson Interview Process are documented in the Socio-Economic Technical Report, Section 5.0.

Date	June 7th 2012
Reference	Furbearers, p. 6-75.
Source	CEC Information Request #3
Question	CEC/MH-III-106

Question:

Please provide up to date data on the long-tailed weasel. A COSEWIC report from the mid-90s is available that outlines the distribution and abundance of the species and its habitat in Manitoba. The species was not as rare as indicated by Stardom. The fragmentation of the boreal/mixed forest and the agricultural fringes may have improved long-tailed weasel habitat since the 1970's.

Response:

Long tailed weasel was not selected as a VEC for the Bipole III Project. Please see section 8.2.6.3 p-8-86 in the EIS for rationale for mammal VEC selection.

Date	June 7th 2012
Reference	Section 8.2.1.5 Summary of Residual Environmental Effects and Significance, Soil Productivity p. 8-18.
Source	CEC Information Request #3
Question	CEC/MH-III-109

Question:

"Previously forested segments of Project right-of-way will experience an increase in annual mean soil temperature over baseline conditions, resulting from soil surface exposure and subsequent change in vegetative cover. An increase in soil temperature leads to positive effects of earlier spring thaw and adverse effects on contributing to droughty or dry soils where soil moisture is currently limited." Why is an earlier spring thaw considered positive? Please explain.

Response:

An earlier spring thaw of non-permafrost soils in forested and agricultural systems results in soils that warm and dry more quickly. This may result in an extended growing season and warmer mean annual soil temperatures, with a resultant higher level of productivity with respect to vegetative growth for soils that are not drought-prone or where soil moisture is not a limiting factor for vegetative growth. Additional detail on this was presented in the "Bipole III Transmission Project, Terrain and Soils Technical Report, Stantec, November 2011", specifically in Section 6.2.4. An excerpt from this section is presented below.

> *Soil temperature is influenced by soil cover and may be increased when soil cover (i.e., canopy cover, low vegetation, forest litter) is removed. Direct effects of increased soil temperatures include adverse changes to moisture conditions causing droughty soils, loss of permafrost and potentially positive effects of increased productivity as a result of earlier spring thaw and an extended growing*

season. The optimum soil temperature for vegetative growth is 10-30°C (Brady and Weil 2008).

The Project may result in an increase in mean soil temperature, particularly in northern areas within the transmission line and project component footprints as a result of vegetation clearing along right-of-ways and grubbing at tower, station and electrode sites. Effects of increased soil temperature will primarily occur during the construction phase of the project, until soil cover (i.e., vegetation) is naturally or actively re-established.

Reference:

Brady , N.C. and R.R. Weil. 2008. The Nature and Properties of Soil. 14 ed. USA: Pearson Prentice Hall.

Date	June 7th 2012
Reference	Section 8.2.1.6, Monitoring pg. 8-21
Source	CEC Information Request #3
Question	CEC/MH-III-110

Question:

Erosion and sediment control. The wording in this section indicates action "should" be taken rather than will be taken. Will there be a guideline that helps determine when actions should be taken and how long the measure should remain. Who will determine this?

Response:

Erosion and sediment control plans will be required by the contractors working on the construction site in areas that maybe susceptible to erosion or sediment loading. These plans will need to be adaptable, as there is no one erosion control method that is suitable for all terrain types. The erosion and sediment plans will be reviewed by MH and discussed with the contractor prior to the start of work. Erosion and sediment control measures that are implemented will be monitored during the course of construction and if required left in place for a period of time to ensure there are no additional issues or concerns resulting from the construction activities. The Environmental Inspector will work in conjunction with the contractor's environmental officer to ensure that the plan is implemented and monitored where required.

Date	June 7th 2012
Reference	GHGs, p. 8-24.
Source	CEC Information Request #3
Question	CEC/MH-III-111

Question:

Possible sources of GHG during construction have been provided. Have emissions from disturbed wetlands been incorporated?

Response:

A life cycle assessment (LCA) was used to estimate the greenhouse gas (GHG) emissions resulting from the construction, land use change, operation, and decommissioning of the Project. Areas that are temporarily disturbed and return to an equivalent carbon stock do not contribute to long-term GHG emissions. Therefore, temporary land-use disturbances to agricultural land, developed areas, exposed land, grassland and shrubs were not included. Permanently altered areas include lands that are converted from one type of vegetation to another (such as forest to shrub) and areas that are permanently cleared (such as the foundations of the transmission towers).

Other than the area displaced by the tower foundations, wetlands will not be permanently disturbed and will remain intact with no changes in water levels or flows associated with the Project.

Date	June 7th 2012
Reference	p.826/27 Air Quality
Source	CEC Information Request #3
Question	CEC/MH-III-113

Question:

It is stated "...there is limited effect on air quality for workers or any surrounding public." What was the reasoning to come to this conclusion? Was there any air quality modelling? Instead of burning slash has there been consideration of chipping or mulching to use as ground cover, especially on roads and trails?

Response:

No modeling was done as the majority of the construction activities are in an outdoor environment, in winter months. The main air quality concern would be from the running of diesel generators or equipment such as trucks, bulldozers. This is mitigated by ensuring that the vehicles and/or equipment are shut off when not in use and not left idling in areas where workers congregate (i.e. construction offices; site trailers).

In some instances the slash from the clearing activities maybe mulched depending on the type of debris in the area, terrain concerns, and time of year or weather conditions (i.e. no burning allowed).

Date	June 7th 2012
Reference	Section 8.2.3.4 Environmental Effects Assessment and Mitigation. p.8-31
Source	CEC Information Request #3
Question	CEC/MH-III-114

Question:

It is stated that the wastewater lagoons have not been assessed as they are subject to a separate licence. However, the effects of the lagoons and other wastewater discharges, here and at other locations should be incorporated into the Cumulative Effects Assessment. It would be advantageous to have these effects included in the EIS.

Response:

Please see Table 9.2-2 – Keewatinoow wastewater management was included in and considered as part of the cumulative effects assessment due to a temporal and spatial overlap with the Project.

Date	June 7th 2012
Reference	Section 8.2.3.4 Environmental Effects Assessment and Mitigation p. 8-32
Source	CEC Information Request #3
Question	CEC/MH-III-115

Question:

In discussion of effects on aquifers, "appropriate" has been used at least twice in different contexts. Please provide an example of what "appropriate" mitigation may entail.

Response:

In the context of mitigation, "appropriate" means measures which are specific and fitting to the issue and site-specific conditions, and that are consistent with industry best practices. These measures will be implemented, as deemed appropriate by experienced field personnel, to minimize the potential for adverse effects and/or inadvertent consequences.

The use of qualified contractors or drillers with appropriate experience, for example, means that for pre-construction and construction activities, contractors who have worked in, and are knowledgeable of, the conditions that are expected to be encountered during ground disturbances will be used. Within areas of known or suspected artesian groundwater conditions, the nature of these conditions means that if encountered, appropriate measures will follow the protocols that have been developed in advance and planned for during pre-construction mitigation planning but will also have to be reactionary based on what is occurring in the field during drilling activities. The use of personnel with appropriate experience to recognize the start of a problem will provide the first line of defense, taking measures to mitigate or preclude further issue. Specifically in regard to encountering artesian conditions, groundwater levels will

be monitored during drilling and should a rise in water levels be detected that are indicative of artesian conditions action (e.g., immediately sealing/grouting the hole) will be taken to mitigate potential for surface and subsurface impacts. Thereafter, any resulting effects will be assessed and addressed by relevant experts to develop and implement remediation and follow-up monitoring strategy(s) that are, among other things, risk based, of sound science, practical, environmentally suitable and economically feasible. For example, if the artesian condition resulted in a saline discharge before it could be sealed, the extent of the affected area (including any impact to vegetation or habitat) will be examined. If the area was not expected to naturally recover from this saline intrusion (e.g., because the salt content was too elevated), a covering fill material might be added or the impacted area might be excavated to assist recovery – providing that this action would not exacerbate the impact footprint (e.g., by equipment required to complete the action).

Date	June 7th 2012
Reference	p. 8-53 Erosion and Sediment Control at Keewatinoow Converter Station
Source	CEC Information Request #3
Question	CEC/MH-III-116

Question:

A list of surface erosion control measures has been provided. Hydro seeding is included as one of the methods. If this were to be undertaken what would be the seeds used? Will they be compatible with the surroundings? Will an exotic/invasive species be introduced? Will guidelines be available to the contractor as to the most appropriate method and sourcing for the location and situation? Who will oversee that the most appropriate method will be used?

Response:

If hydroseeding is used, regional native grass mixtures will be used so that they are compatible with the surroundings. The seed mixture will not contain non-native or invasive species. The seed mix will be prescribed in the contract specifications, and sourcing of the seed will be the responsibility of the contractor. A terrestrial ecologist will be available to provide guidance where it is required. The surface erosion control method used will be determined by the construction contractor. Manitoba Hydro inspectors will determine if the method chosen is appropriate.

Reference	June 7th 2012
Reference	Native Grassland/Prairie Areas p. 8-74/75/76
Source	CEC Information Request #3
Question	CEC/MH-III-118

Question :

In sparsely treed areas of dry upland prairie, have alternate methods of clearing and management been considered? Is burning an option for clearing and/or maintenance? Can managed grazing be incorporated into maintenance?

Response:

In sparsely treed areas of dry upland prairie, very little tree control is required. Burning is a resource intensive method, requiring frequent repetition to be successful. Alternative compatible use of the right-of-way such as grazing is encouraged whenever possible.

Date	June 7th 2012
Reference	Bird Mortality p. 8-135
Source	CEC Information Request #3
Question	CEC/MH-III-119

Question:

Discussion on nest parasitism includes examples from other parts of Manitoba and other areas. Have any studies been initiated related to the impact of Wuskwatim, Bipole I & II or any other transmission lines? Are any planned as follow-up to Bipole?

Response:

Manitoba Hydro has not conducted studies on the effects of nest parasitism resulting from transmission lines such as Wuskwatim, Bipole I and II or other transmission lines in Manitoba. Scientific literature that includes increased brown-headed cowbird nest parasitism resulting from fragmentation and linear features is extensive, and relevant literature was used for the effects assessment. Although only a small effect is predicted for those VECs which are vulnerable in part to nest parasitism, and direct monitoring of brown-headed cowbird nest parasitism is not anticipated for the Bipole III Project, potential brown-headed cowbird distributional changes will be monitored indirectly using breeding bird survey methods during the construction and operation phases.

Date	June 7th 2012
Reference	Access Control
Source	CEC Information Request #3
Question	CEC/MH-III-121

Question:

Access control is mentioned throughout the document in many sections and in relation to many issues. What types of access prevention methods are proposed and in what situations would they be applied? How will their success be monitored and by whom? Are there existing data that provide success rates of various methods?

Response:

A consideration of the routing process included choosing alternatives that avoided densely populated areas and access limiting terrain. As such the Bipole III transmission line right-of-way is routed across more than 300 streams, numerous fens, bogs, and marshes, significantly limiting access and associated disturbance related effects.

As part of four rounds of public engagement, biophysical, socio-economic and Traditional Knowledge studies, concerns regarding potential access restrictions and increased access opportunities were expressed by a wide range of stakeholders. In response, Manitoba Hydro is preparing access management plans that address these concerns.

Access control and prevention initiatives will be applied generally across the project site and specifically in regards to identified sensitive sites. General measures include:

- Use of existing access roads/trails and linear features to the extent possible (Manitoba Hydro has undertaken a preliminary construction access review for the transmission line component of the project and identified existing access opportunities);

- Limiting clearing and construction in the forested zone to the winter months (i.e., minimizes project traffic during the sensitive non-frozen period);
- No all-weather road construction; no upgrading of seasonal roads/trails except at the northern infrastructure sites;
- Limiting access to the Project construction zone to project specific traffic during the construction phase;
- Clearing, construction and decommissioning activities are conducted according to the timing windows set out in EIS Chapter 11, Attachment 11-1, Appendix F (i.e., minimizes project traffic during sensitive periods/seasons);
- Project workers will not be allowed to hunt or fish on the project site; anyone living in construction camps will be prohibited from bringing weapons into the camp.
- Manitoba Hydro will collaborate with Manitoba Conservation and Water Stewardship on requests for ROW use for recreational purposes;
- For reasons of safety and at the direction of the Minister of Manitoba Conservation and Water Stewardship 'No Hunting' signs may be posted at the construction site and approaches to it.

More site specific access management measures are applied to Sensitive Sites and include:

- Creating line of sight barriers;
- Creating indirect access routes onto the ROW;
- Limiting access to seasonal (winter only);
- Decommissioning of new access roads/trails after construction;
- Timing of activities within sensitive areas to minimize disturbance;

- Where appropriate and practical access by air versus ground (e.g., for inspections).

For additional access related mitigation measures see EIS Chapter 11, Attachment 11-1 and supporting appendices.

Access management plans are currently being developed by Manitoba Hydro for the construction and maintenance phases of the project. These plans will be reviewed with Manitoba Conservation and Water Stewardship.

Manitoba Hydro's Environmental Protection Implementation Team will be responsible for monitoring the effectiveness of its access management plans as part of the Socio-Economic Monitoring Program. Environmental monitors and inspectors will be on-site regularly and will document and report on incidents of non-project related traffic on the construction site. Where warranted, additional access control measures will be implemented on a site-by-site basis.

Manitoba Hydro is not aware of extensive control data that illustrate the success rate of access management measures as they pertain to transmission rights-of-way. However, data from the recent Wuskwatim Transmission Project reported a very low incidence rate of non-project related traffic (0.5%) on the project site in the vicinity of Thompson.

Date	June 7th 2012
Reference	CEC Information Request #3
Source	CEC Information Request #3
Question	CEC/MH-III-122

Question:

It is noted that the Technical Reports are dated November 2011. Were the reports finalized in November 2011 or were they all dated November 2011 for purposes of the application filing? If the completion dates are different than November 2011, please file the completion dates.

Response:

The technical reports and the EIS were finalized November 2011 and were submitted with the Bipole III Transmission Project Environmental Impact Statement to Manitoba Conservation and Water Stewardship December 1st, 2011.

Date	June 15th 2012
Reference	Appendix 7A of the EIS
Source	CEC Information Requests # 4
Question	CEC/MH-IV-132

Question:

Appendix 7A of the EIS in describing the route selection process for Section 1 of the Bipole III line acknowledges that the first 92 kilometres of the line fails to respect the criterion for a 40-kilometre minimum separation distance. Would Manitoba Hydro also acknowledge that an additional approximately 100 kilometres of the Bipole III line on the south side of Highway 6 from a point south of Paint Lake to a point just north of the intersection of Highway 6 with Highway 39 also fails to satisfy the criterion for a 40-kilometre minimum separation distance? And, if so, would Manitoba Hydro explain why that failure is not noted in Appendix 7A of the EIS in describing the route selection process for Section 4 of the Bipole III line?

Response:

Manitoba Hydro acknowledges that the Final Preferred Route is located within the 40 km suggested separation distance from Bipoles I and II from a point south of Paint Lake to a point approximately midway between PTH 6 and Hargrave Lake.

The issue of separation (< 40 km from Bipoles I and II) is noted and taken into consideration as early as the initial evaluation of the alternative routes (see results for alternative route segment BB2 in EIS Chapter 7, Appendix 7A, Table 7A-1, Section 4) although unintentionally overlooked in the description of the initial preferred route in Section 7.3.2.1. The issue is again mentioned in Section 7.4.1.2 in discussions regarding routing challenges regarding mineral interests related to the Thompson Nickel Belt area, as well as in Chapter 7, Appendix 7B, Table 7B-1, Section 4 as it relates to adjustments to the Preliminary Preferred Route and determination of the Final Preferred Route.

Manitoba Hydro is reviewing the design and planning to strengthen the towers of the Bipole III transmission line in certain areas where the route selection process has resulted in reduced separation from Bipoles I and II.

Date	June 15th 2012
Reference	CEC Information Requests # 4
Source	CEC Information Requests # 4
Question	CEC/MH-IV-134

Question:

Manitoba Hydro has failed to take into account, in the Bipole III EIS, the unforeseeable, yet real, long-term impacts on farmland in Manitoba that will certainly be felt over the projected 60-year life of the transmission line. Where will farming be 60 years after Bipole III transmission line is built? That's in the year 2077. Unforseeable? Unimaginable? Probably. But the challenges are not impossible to meet. The problem should be avoided in the first place. Nutrient design and delivery will be far different than at present with decreasing adverse impacts. New energy sources for powering farm operations will almost certainly replace the current petroleum-based diesel fuel. Problems that are not even conceivable today will, with certainty, be encountered directly and indirectly before the end of the useful life of a Bipole III line running through more than 200 kilometres of Manitoba's best farmland located in an agroclimatic zone that has no equal in western Canada. Please comment.

Response:

Manitoba Hydro will not comment on potential future farming practices; however, in selecting the Bipole III route and the locations for tower placement, Manitoba Hydro has considered reasonably foreseeable agriculture practices, such as the possible use of larger seed drills and sprayers in the future.

Date	June 15th 2012
Reference	CEC Information Request #4
Source	CEC Information Request #4
Question	CEC/MH-IV-144

Question:

The EIS has failed to recognize the severity of the impact of the Bipole III transmission line on agricultural productivity. Section 8.3.1.3 in Chapter 8 of the EIS affirms that approximately half of the 585 kilometers of the Bipole III line that passes through agricultural land is cultivated. This Section also states:

During operations, the potential effects to agriculture are anticipated to be negative, small in magnitude, Project footprint/Site in geographic extent and medium-term in duration given the ongoing presence of the line, and are therefore considered not significant.

Table 8.3-1 in Section 8.3.1.4 in Chapter 8 of the EIS summarizes the residual effects of the Bipole III line on each of six Valued Environmental Components, including agricultural productivity, and confirms the above conclusion.

Please file more complete information and analysis of the impact of the Bipole III transmission line that demonstrates that Manitoba Hydro understands the severity of the impact of the line on agriculture.

Response:

No further analysis will be carried out by Manitoba Hydro. Manitoba Hydro recognizes that route selection and tower placement on agricultural land may cause impediments to farming activities such as seeding, spraying, irrigation, and cultivation, and loss of

productive land. For this reason, Manitoba Hydro has established a compensation policy to address these issues.

Date	June 15th 2012
Reference	Chapter 8 of the EIS
Source	CEC Information Requests # 4
Question	CEC/MH-IV-145

Question:

The EIS has failed to recognize the need for a training and monitoring program, prior to and during the construction phase, for workers, contractors and supervisory staff from MH that emphasizes accountability and a commitment to avoiding or mitigating against the adverse socioeconomic and environmental impacts of the Bipole III Project. No training and monitoring program is identified in Chapter 8 of the EIS that emphasizes accountability and commitment to avoid or mitigate against adverse socioeconomic and environmental impacts during the construction phase of the Bipole III Project. The EIS needs to be strengthened by the inclusion of training and monitoring programs that emphasizes accountability and commitment to avoiding or mitigating against adverse socioeconomic and environmental impacts during the construction phase of the Bipole III Project. Please provide.

Response:

Manitoba Hydro is committed to ensuring that any project undertaken by the corporation meets or exceeds our corporate environmental goals and objectives. The construction Environmental Protection Plan will encompass all environmental mitigation measures that will be required for the Project and will be followed by the contractor on site. Manitoba Hydro has committed to minimizing any environmental impacts through environmental inspectors/monitors, who will implement and monitor the EPP. MH will be working in conjunction with many communities during the construction of the Bipole Transmission Project. Additionally, all employees, both MH and contractors, will be required to have Aboriginal Awareness training prior to the start of the Project.

Date	June 15th 2012
Reference	CEC Information Requests # 4
Source	CEC Information Requests # 4
Question	CEC/MH-IV-146

Question:

The EIS does not reflect a willingness on the part of Manitoba Hydro to adjust the construction schedule for the Bipole III line to accommodate unexpected occurrences that have the potential for adverse environmental impact. MH also needs to recognize that construction should not be scheduled in cropped areas during the growing season. Please comment.

Response:

Construction schedules have flexibility in terms of having the capacity to deal with unexpected events. Given that construction activities are planned to be undertaken during the winter the environmental impacts are lessened. The main risk to the schedule would be inclement weather conditions that would delay construction activities.

Manitoba Hydro will meet with landowners in advance of any activities occurring on their lands to discuss access, rehabilitation, site-specific sensitivities and compensation. Where construction activities do take place in cropped areas during the growing season, Manitoba Hydro will minimize the negative effects to landowners as much as possible. In addition, Manitoba Hydro will rehabilitate and/or compensate landowners for all damages resulting from its activities (e.g., soil compaction, fence, access trail/road repairs, crop losses).

Date	June 15th 2012
Reference	CEC Information Requests # 4
Source	CEC Information Requests # 4
Question	CEC/MH-IV-147

Question:

The EIS does not clearly indicate the willingness of Manitoba Hydro to adjust the construction schedule to take into account, for example, the calving season for woodland caribou or the lekking periods for Sharp-Tailed Grouse. These are only two examples of the flexibility required to illustrate how a little thought and care in dealing with unexpected occurrences can make a considerable difference to long-term sustainability. Grain farming, on the other hand, is not an unexpected occurrence. It would be extremely disruptive to cropping operations if construction of the Bipole III line were to occur at any time during the April-to-October growing season and so construction in cropped areas should occur only during the winter months. Please apply this restriction only in the arable lands traversed by the line between Amaranth and the Riel converter station in the south and in the cropped land in the west near Cowan, Swan River and The Pas.

Response:

To mitigate potential impacts on species such as boreal woodland caribou during calving season, Manitoba Hydro will endeavor to undertake much of the northern transmission line construction during the winter months. Measures will be taken during summer construction to minimize impacts to farming operations. Manitoba Hydro will meet with landowners in advance of activities occurring on their lands to discuss access, rehabilitation, site-specific sensitivities and compensation. Where construction activities do take place in cropped areas during the growing season, Manitoba Hydro will minimize the negative effects to landowners as much as possible. In addition, Manitoba Hydro will rehabilitate and/or compensate landowners for damages resulting from its activities.

Date	June 22nd 2012
Reference	Chapter 2
Source	CEC Information Request #5
Question	CEC/MH-V-151

Question:

What sizing options were considered for Bipole III? Please provide the reasons for selecting a 2000 MW line.

Response:

The Bipole III reliability project is sized to provide a nominal north-south transmission capacity of 2000MW. As explained in the EIS Chapter 2, the capacity deficit for meeting Manitoba peak load is about 1500MW in 2017 and it grows to approximately 2000MW by 2025. The document goes on to explain that if an outage of either the Dorsey Station or the Bipole I & II HVdc lines occurred in January 2017 Manitoba Hydro would not be able to meet demand for 85% of the time during that month. A reliability project that can meet the capacity deficit requires significant lead time and therefore should be sized to address the reliability need for as many years as possible thereafter. A 2000MW Bipole III is considered to be a cost effective solution to meet such a requirement.

Since the 2000MW Bipole III is to be terminated in the Northern Collector System with the other two Bipoles (BP I -1854MW and BP II - 2000MW) the compatibility in size provides for many conveniences and flexibility in operation and maintenance. One of them, for example, is the ease and simplicity in balancing of the power between the Bipoles for non-catastrophic outages. Maintenance of spare components is another. All these factors reduce operating & maintenance costs of the HVdc system.

The technical considerations such as the system frequency depression for ac system faults and the power lost for an outage of the bipole does not favor a Bipole III size much larger than the existing bipoles.

Considering the above, the nominal 2000MW size was determined best for the Project and reliability.

Date	June 22nd 2012
Reference	Chapter 2
Source	CEC Information Request #5
Question	CEC/MH-V-152

Question:

Please indicate the standard(s) Manitoba Hydro employs for the design of their transmission lines and indicate what these standards yield in terms of the need for additional transmission capacity from Northern Manitoba to southern load centres.

Response:

The standards Manitoba Hydro uses for transmission planning are the NERC Transmission Planning Standard. The existing planning standard for extreme disturbances requires the planner to evaluate the risks and consequences of such disturbances and documents the results of the assessment. The new Transmission Planning Standard (TPL-001-2) under development stipulates that if the analysis concludes there is cascading caused by the occurrence of extreme events, an evaluation of possible actions designed to reduce the likelihood or mitigate the consequences and adverse impacts of the event(s) shall be conducted.

These standards, however, do not directly dictate the need for additional transmission capacity from northern Manitoba to the southern load centre, nor do they indicate the level of vulnerability for which the mitigation is determined necessary.

Manitoba Hydro has assessed the risks to the Manitoba supply and determined the need to mitigate this large outage (the loss of Bipole I and II) based on careful consideration of many different factors which include:

- The present day vulnerability of the Manitoba Hydro HVdc system (Bipole I and II and associated converter stations) to catastrophic type events

- The “near miss” incidents in Manitoba.

- The potential supply shortfall without the MH-HVdc system and the growing deficit.

- The social and economic implications of an extended duration of catastrophic outage of the Manitoba HVdc system.

- The best practices of other utilities in mitigating the effects of low probability high consequence catastrophic outages despite far less impact in comparison to the level of risk of the Manitoba HVdc system.

These factors are explained in detail in Chapter 2 of the EIS. Bipole III is considered the most cost effective solution in comparison to other alternatives to improve the system reliability.

Date	June 22nd 2012
Reference	Chapter 6 Sec 2.5_ pages 6-30 to 33, 6-50 to 6-55
Source	CEC Information Request #5
Question	CEC/MH-V-157

Question:

Many of the vegetation descriptions are rather incomplete (e.g. pages 6-30 to 6-33, 6-50 to 6-55). A brief list of some dominant species does not really provide a vegetation community description. In addition to species lists, vegetation descriptions should consider including physiognomy (vertical structure), life and growth form (woody, herbaceous, mosses), tree heights and stand age, general productivity and biomass estimates, and estimates of stored carbon (particularly important for organic substrate wetlands).

Can more complete descriptions be provided?

Response:

The vegetation descriptions provided on pages 6-30 to 6-33 (aquatics) and 6-50 to 6-55 (vegetation and terrestrial ecosystems) of the EIS are for the purpose of providing generalized information for the existing environment. The intent here is to characterize the ecological units by regional factors such as climate, landform, physiography, soils and vegetation.

Information on the vegetation community types observed during fieldwork conducted in 2010 is located in Section 6.2.5.8 of the EIS. Detailed descriptions of the vegetation community types are provided in Section 7.1.4 of the Vegetation and Terrestrial Ecosystems Technical Report.

The community type descriptions provide details on the species composition and structure from the vegetation layers, or strata. Namely, the tree stratum (>2.5m), the tall shrub stratum (1-2.5m), the herb and low shrub stratum (≤1m), and the non-

vascular ground stratum with inanimate cover. The terms used here for forested plots are taken from the Canadian Vegetation Classification System (National Vegetation Working Group 1990), and are defined as: sparse 10-25%; open >25-60%; and closed >60% canopy cover.

A full species list of all plant taxa identified in all plots is found in Appendix G of the Vegetation and Terrestrial Ecosystems Technical Report. Here, tables detail the species composition and mean percent cover for all community types recorded across seven ecoregions of the study area. In each table, data is ordered by four possible vegetation strata: trees, tall shrubs, herbs and low shrubs, and non-vascular ground and inanimate cover. Forest mensuration was not recorded in the vegetation fieldwork.

Date	June 22nd 2012
Reference	Chapter 6 Section 2.5 Page 6-57
Source	CEC Information Request #5
Question	CEC/MH-V-159

Question:

Page 6-57. Terminology issue: distinguish (inland) saline marshes from saltpans (areas of salt accumulation from lack of drainage), and from salt flats resulting from saline springs (west shore of Lake Winnipegosis).

Response:

Salt marshes are wetlands that are affected by the daily or seasonal influences of brackish to saline water as defined by Cauboue et al. (1996). These herbaceous wetlands can occur on peat or mineral soils saturated by sodium- and chlorine rich groundwater seeping from natural saline aquifers. Salts flats are areas of salt left by the evaporation of a body of saline water.

Two data sources were used to identify sensitive saline sites (i.e., salt marshes and salt flats) in the Bipole III Project area. Ducks Unlimited Canada provided information on the location of salt marshes in the Mid-Boreal Lowland and Interlake Plain Ecoregions. Forest Resource Inventory (Manitoba Conservation) recognizes salt flats in the Churchill River Upland, Hayes River Upland, Mid-Boreal Upland, Mid-Boreal Lowland, Boreal Transition, Interlake Plain, Aspen Parkland and Lake Manitoba Plain Ecoregions.

These terms as identified by the data sources were used consistently throughout the Vegetation and Terrestrial Ecosystems technical report as well as the EIS.

Reference:

Cauboue, M., W.L Strong, L. Archambault, and R.A. Sims. 1996. Terminology of Ecological Land Classification in Canada. Natural Resourcs Canada, Canadian Forest Service – Quebec. Sainte-Foy, Quebec. Information Report LAU-X-114E.

Date	June 22nd 2012
Reference	Chapter 6 Section 2.5 page 6-59
Source	CEC Information Request #5
Question	CEC/MH-V-160

Question:

Only a very brief mention of calcareous wetlands (fens) is made (page 6-59), but these may occur (not yet found) in areas east of Porcupines, Duck and Riding Mt. escarpment region.

Please comment on the possibility and the efforts that will be made to identify these areas within the project footprint.

Response:

Calcareous wetlands (fens) are considered a rare wetland type in North America. As defined, these wetlands are characterized by a fluctuating water table with slow drainage where water becomes enriched with calcium and magnesium deposits. No data sources used in the analysis for the Bipole III Transmission Project identified calcareous wetlands nor did field investigations in 2010 discover this wetland type along the preliminary preferred route.

Additional project fieldwork identified in the Vegetation and Terrestrial Ecosystems technical report (Section 7.8) recommends that pre-construction surveys for species of conservation concern occur in areas likely to support these plants along the preferred transmission route. Currently (2012), field investigations for the Bipole III Transmission Project are occurring for species of conservation concern and sensitive habitats in the northern portion of the project area.

It is possible that calcareous fens may be located in the areas the Porcupine, Duck and Riding Mountain escarpment. Pre-construction surveys in future years with the aid of orthoimagery, aerial photographs, and aerial reconnaissance will help determine if these

wetlands occur along the transmission route, which would receive appropriate mitigation.

Date	June 22nd 2012
Reference	Chapter 6 Section 2.5 Page 6-59
Source	CEC Information Request #5
Question	CEC/MH-V-161

Question:

The focus on specific known plant species is fine (page 6-59). However, much of the area has not been properly surveyed (e.g. vegetation survey did not adequately sample less common habitat, such as sandy areas, saline springs, calcareous fens, and so forth). This is especially true in the central and northern areas. Also, a species-specific focus ignores the community assemblage; there are many rare plant communities, even though no single species making up to the community is necessarily a listed species of concern.

Please comment and clarify the constraints on the information base that Hydro is relying upon to classify and identify these habitats.

Response:

A total of 173 sites were visited to assess vegetation along the Project study area in 2010, not including the sites visited in 2009 to assist with identifying sensitive sites for the alternate route evaluation, and were avoided to the extent possible during siting/routing of the Project.

Surveys conducted followed published methods outline in Redburn and Strong (2008) for the vegetation assessment and the Alberta Native Plant Council (2000) for conducting rare plant surveys. Representative vegetation types were sampled as well as less common types or areas with greater potential to support species of conservation concern including patterned fens, salt marshes, other wetlands, prairies, sandy sites and riparian areas. Rare plant surveys were floristic in nature to allow for greater spatial coverage of the site, and habitats most likely to support listed species were targeted.

No rare plant communities listed by the Manitoba Conservation Data Centre database were observed during the field surveys.

Rare habitats were identified using existing data sources including the Land Cover Classification Enhanced for Bipole, Forest Resource Inventory, Wetlands of Manitoba, the Manitoba Conservation Data Centre database, as well as field investigations along the preliminary preferred route. Pre-construction surveys will be conducted in future years along the final preferred route to identify the presence of additional rare plants and plant communities.

The constraints of the existing data sources used to identify these habitats includes the use of secondhand information which can be incomplete (e.g., specific rare plant locations), information that is general in nature with broad cover classes, and often speculative data without basic or limited field observation. As such, field investigations for rare plants and communities will be completed as pre-construction surveys in the effects area, where existing data sources may not detect these locations.

Date	June 22nd 2012
Reference	Chapter 6 Section 2.5 page 6-62
Source	CEC Information Request #5
Question	CEC/MH-V-162

Question:

Page 6-62. Flooded jellyskin (Leptogium rivulare) is a lichen, not a fungus.

Response:

Noted. This will be documented in our submission of errata found in the EIS.

Date	June 22nd 2012
Reference	Chapter 6 Section 2.5 Page 6-67
Source	CEC Information Request #5
Question	CEC/MH-V-163

Question:

The list of invasive plant species is very incomplete (page 6-67). Since right-of-way clearance will result in heavy soil disturbance (which promotes the invasion of foreign plants), a complete list of potentially invasive plant species for the region needs to be provided.

Please provide a more complete list, that includes species that are likely to invade in addition to those that have been identified.

Response:

The invasive species listed on page 6-67 were species observed during field investigations completed in 2010.

A list of potentially invasive plant species that could occur within the Bipole III Transmission Project area includes the following: American Dragonhead, Annual Sowthistle, Barnyard Grass, Bird Vetch, Bladder Campion, Blue Weed, Broad-Leaved Plantain, Bouncing Bet, Bull Thistle, Canada Thistle, Chickweed, Cocklebur, Common Burdock, Common Crupina, Common Groundsel, Common Milkweed, Common Tansy, Cow Cockle, Creeping Bellflower, Curled dock, Dames Rocket, Dalmatian Toadflax, Dandelion, Diffuse Knapweed, Downy Brome, European Buckthorn, Field Bindweed, Field Scabious, Flixweed, Flowering Rush, Foxtail Barley, Garlic Mustard, Giant Hogweed, Green Foxtail, Hemp-Nettle, Himalayan Balsam, Hoary Alyssum, Houndstongue, Invasive Phragmities, Japanese Brome, Japanese Knotweed, Jointed Goat Grass, Kudzu Vine, Lamb's Quarters, Leafy Spurge, Mile-a-minute Weed, Narrow-Leaved Hawk's Beard, Night-Flowering Catchfly, Nodding Thistle, Orange Hawkweed, Paterson's Curse, Oxeye

Daisy, Perennial Sowthistle, Pineapple Weed, Prostrate Knotweed, Puncture Vine, Purple Loosestrife, Purple Nutsedge, Purslane, Quackgrass, Red Bartsia, Red Root Pigweed, Round-Leaved Mallow, Russina Knapweed, Russian Thistle, Salt Cedar, Scentless Chamomile, Scotch Thistle, Shepherd's Purse, Smartweed, Spotted Knapweed, St. John's Wort, Stinkweed, Stork's Bill, Tall Buttercup, Tansy Ragwort, Volunteer Barley, Volunteer Canola, Volunteer Flax, Volunteer Wheat, White Cockle, Wild Buckwheat, Wild Mustard, Wild Oats, Woolly Cupgrass, Yellow Foxtail, Yellow Nutsedge, Yellow Starthistle, and Yellow Toadflax. This list of plants was referenced from the Invasive Species Council of Manitoba and Manitoba Agriculture, Food and Rural Initiatives.

Date	June 22nd 2012
Reference	Chapter 6 Section 2.6 Pages 6-73 to 6-91
Source	CEC Information Request #5
Question	CEC/MH-V-164

Question:

The section should discuss and consider all mammal species, but the focus tends to be on only a few (e.g. lynx, otter and fisher and small mammals are virtually ignored). It is understandable that some species (e.g. caribou) require considerable attention (e.g. species at risk), but does not mean that others should be entirely ignored.

Please include a more complete list of mammals.

Response:

Section 3.2.2 (Identification of Mammal Valued Environmental Components and Constraints) of the Bipole III Mammals Technical Report details the rationale and approach to VEC selection. A complete list of mammals in the Bipole III study area can be found in Appendix C of the Bipole III Mammals Technical Report. Mammal species discussed in detail in Chapter 6 Section 2.6 were those indicated in Section 6.2.6.5 as Valued Environmental Components (VECs). Detailed discussions were presented for coastal and barren-ground caribou, boreal caribou, moose, elk, American marten, beaver and wolverine. In addition, wolves were discussed as being a 'linkage' species. Please see VEC processes described in the Chapter 1, Section 1.5 and the approach adopted for this project in Chapters 4 (Effects Assessment Approach) and Chapter 7 (Evaluation of Route Alternatives) of the Bipole III EIS. Lynx, otter, fisher and other mammal species were described only briefly because they were not selected as VECs.

Date	June 22nd 2012
Reference	Aboriginal Traditional Knowledge Technical Report 1 page 101
Source	CEC Information Request #5
Question	CEC/MH-V-172a

Question:

Which of the authors performed the coding? (text on p. 101 seems to say one did most of it, but this isn't completely clear). The purpose in asking this is not to determine which author did it, but rather to determine if intercoder variation (below) is a potential issue.

Response:

Northern Lights Heritage Services Inc. staff members Hani Khalidi, M.A. and Emily Linnemann B.A. Adv. , as listed on pages 100 and 101 of the ATK Technical Report 1 performed the coding under the direction of Virginia Petch, Ph.D., RPA, EP.

Date	June 22, 2012
Reference	Aboriginal Traditional Knowledge Technical Report 1
Source	CEC Information Request #5
Question	CEC/MH-V-172b

Question:

If more than one of the authors was involved in coding, was intercoder reliability measured? How? What was it?

Response:

Intercoder reliability requires that the same segments of text are coded independently by two or more individuals (see Hruschka et al. 2004), was not measured for the Bipole III ATK Technical Report #1. The reason being that time limitations set for the study and the volume of textual materials derived from 19 communities required that the process of coding had to be distributed between two researchers.

Intercoder variation was minimized using an acceptable process outlined by Hruschka et al. (2004:310). This involves segmentation of text, codebook creation, coding, assessment of reliability, and codebook modification. Within the assessment of reliability stage, a priori coding was utilized (see Stemler, 2001:3) using iterative between-coder comparisons and revisions to the codebook (Hruschka et al. 2004:321). For a priori coding, Stemler notes that "Professional colleagues agree on the categories, and the coding is applied to the data." (2001:3) For the iterative between-coder comparisons and revisions to the codebook, Hruschka et al. note that "...the procedures described in this article do not actually generate a codebook for which all coders will have high intercoder reliability but rather create an interpretive framework that may only be specific to the current team of coders" (2004:321).

References:

Hruschka, D. J. et al. (2004). Reliability in Coding Open-Ended Data: Lessons Learned from HIV Behavioural Research. In Field Methods, Vol 16 No. 3, August 2004 307-331. Sage Publications.

Stemler, S. (2001). An Overview of Content Analysis. In Practical Assessment, Research and Evaluation Vol 7 No 17. PAREonline.net

Date	June 22nd 2012
Reference	Aboriginal Traditional Knowledge Technical Report 1 page 30
Source	CEC Information Request #5
Question	CEC/MH-V-172c

Question:

How were the “ATK Areas” (p. 30) delineated?

Response:

The ATK areas (Regions 1 through 5) represented in Figure 10 - Map of ATK Areas Defined for Analytical Purposes, were delineated on the basis of proximity and regional concentration of environmentally sensitive ATK sites along the vast length of the proposed Final Preferred Route. The regional delineations facilitated discussion of Common Community Concerns With Respect to Potential Project Effects in the Bipole III Study Area (section 4.1.2) and Unique Community Effects in the Bipole III Study Area (section 4.1.3).