

Blunt, Bryan (CON)

From: Jones, Chuck (STEM)

Sent: Thursday, January 07, 2010 2:02 PM

To: Blunt, Bryan (CON)

Cc: Miskimmin, Barb (STEM)

Subject: Environment Act Scoping Document-Manitoba Hydro Bi-Pole 111

Enclosed for your information are our suggestions for inclusion in the above noted scoping document.

1. Reference to mineral tenure system should be included in the scoping document. There may be cases where private mineral rights are negatively affected. Also, valid mineral dispositions that are currently in good standing under the Mines and Minerals Act should be documented. A mineral disposition grants the holder the legal right to access the surface of the land for exploration and extraction purposes. This will help avoid land access and use conflicts with mining activity.
2. Potential mineral deposits, mine sites and related infrastructure and tailings areas should be documented.
3. Aggregate and borrow areas should also be documented.

Blunt, Bryan (CON)

From: Webber, Randy (CON)

Sent: Monday, January 18, 2010 8:17 AM

To: Braun, Tracey (CON)

Cc: Blunt, Bryan (CON); Ouimet, Darrell (CON); Lee, Cliff (CON)

Subject: Manitoba Hydro - Bipole III Scoping Document

Tracey,

Environmental Operations, Winnipeg District has reviewed the above noted document and has no comments or concerns at this time.

Regards
Randy

Randy Webber
Regional Supervisor
Winnipeg District
Manitoba Conservation
160 - 123 Main Street
Winnipeg MB R3C 1A5
204-945-7053 (phone)
204-948-2338 (fax)
randy.webber@gov.mb.ca

Blunt, Bryan (CON)

From: Roberts, Pierce (CON)
Sent: Wednesday, February 03, 2010 5:34 PM
To: Blunt, Bryan (CON)
Subject: FW: Bipole 3 Environment Assessment Scoping Document
Attachments: Bipole 3 EA Scoping Letter 0912.pdf; Bipole 3 EA Scoping Document 0912.pdf

Good day Bryan.

The NE Region has reviewed the scoping document and submits the following comments.

- Under Section 2.0 Regulatory and Policy Framework — The Region recommends adding the following for Provincial legislation:
 - The Crown Lands Act and the Wildfires Act.
- Under Section 7.4.3 Construction — The Region recommends that this section also include:
 - Clearing methods and equipment used for clearing of the transmission line ROW and access roads.
 - Debris disposal methods of cleared vegetation.

Pierce

From: Kearney, Stephen (CON)
Sent: Monday, January 04, 2010 11:33 AM
To: Barton, Brian (CON); Danyluk, Steven (CON); Hedman, Daryll; Holmes, Bruce (CON); MacCharles, Rod (CON); Macdonald, Don (WSD); Roberts, Pierce (CON); Saskowski, Lyle (CON)
Subject: Bipole 3 Environment Assessment Scoping Document

Environmental Assessment and Licencing Branch has received the attached Scoping Document from Mb Hydro for the Bipole 3 Transmission Project, and has placed it in the Public Registries and circulated to government departments for review. Bryan Blunt has been assigned as the contact person to co-ordinate the review.

IRMT - Please have a look at the document and provide comments (if any) to Brian by January 29, 2010.

Brian / Pierce — Please advise Bryan of any comments by February 5, 2010. Thanks.

Steve

Blunt, Bryan (CON)

From: Elliott, Jessica (CON)
Sent: Thursday, February 04, 2010 8:38 AM
To: Blunt, Bryan (CON)
Subject: Manitoba Hydro - Bi-Pole III Transmission Project: Scoping Document (file 5433.00)

Parks and Natural Areas Branch has reviewed the scoping document files pursuant to *The Environment Act* by Manitoba Hydro for the Bi-Pole III transmission project (file 5433.00). The branch has no comments to offer on this document.

Jessica

Jessica Elliott
Ecological Reserves and Protected Areas Specialist
Parks and Natural Areas Branch
Manitoba Conservation
Box 53, 200 Saulteaux Cres., Winnipeg, MB, R3J 3W3
phone: 204-945-4148
fax: 204-945-0012
email: jessica.elliott@gov.mb.ca



Before printing, think about the environment
Avant d'imprimer, pensez a renvironnement

Blunt, Bryan (CON)

From: Stephens, Jonathan (CON)
Sent: Friday, January 29, 2010 3:08 PM
To: Blunt, Bryan (CON)
Cc: Braun, Tracey (CON); Barto, William (CON)
Subject: EA Scoping Document - Manitoba Hydro — BI-POLL III Transmission Project: A Major Reliability Initiative (File: 5433.00) - due February 10, 2010
Attachments: 2010 01 26 PAI's Initial Review of Hydo's proposed Bipole Routes.pdf

The Sustainable Resource and Policy Management Branch and the Protected Areas Initiative (PAI) has reviewed the EA Scoping Document - Manitoba Hydro — BI-POLL III Transmission Project: A Major Reliability Initiative (File: 5433.00) and has the following comments.

PAI has conducted an initial evaluation of the proposed Bipole III routes. The proposed routes appear to cross a significant portion of areas that are not adequately represented in the protected areas network. Because much of the area is not adequately protected it is important not to bisect Areas of Special Interest (ASIs) which are designed to capture the underrepresented features. In southern Manitoba there are few ASIs as there is limited Crown land available due to fragmentation by intensive human activity. Therefore, PAI asks that Crown lands to be avoided in southern Manitoba as its land base has high rates of rare and at risk species with a low percentage of protected land base.

In addition, the attached .pdf in PowerPoint format outlines PAI's initial concerns and comments regarding the proposed routes. This is a preliminary review and in many cases a more detailed analysis is required to determine the full impact of the routes. For example, PAI is currently involved in a planning exercise in the Saskatchewan River Delta/Red Deer ASI region and therefore couldn't provide a complete review as the concerns identified may change following the results of the planning exercise.

Manitoba's protected areas network is comprised of a collection of Crown lands with different land designations including ecological reserves, national and provincial parks, wildlife management areas and provincial forests. Through Memorandums of Agreement, private lands owned by conservation agencies are also recognized as part of Manitoba's network. Protected areas are land, freshwater or marine areas, where logging, mining, hydroelectric development, oil and gas development, and other activities that significantly and adversely affect habitat are prohibited through legal means.

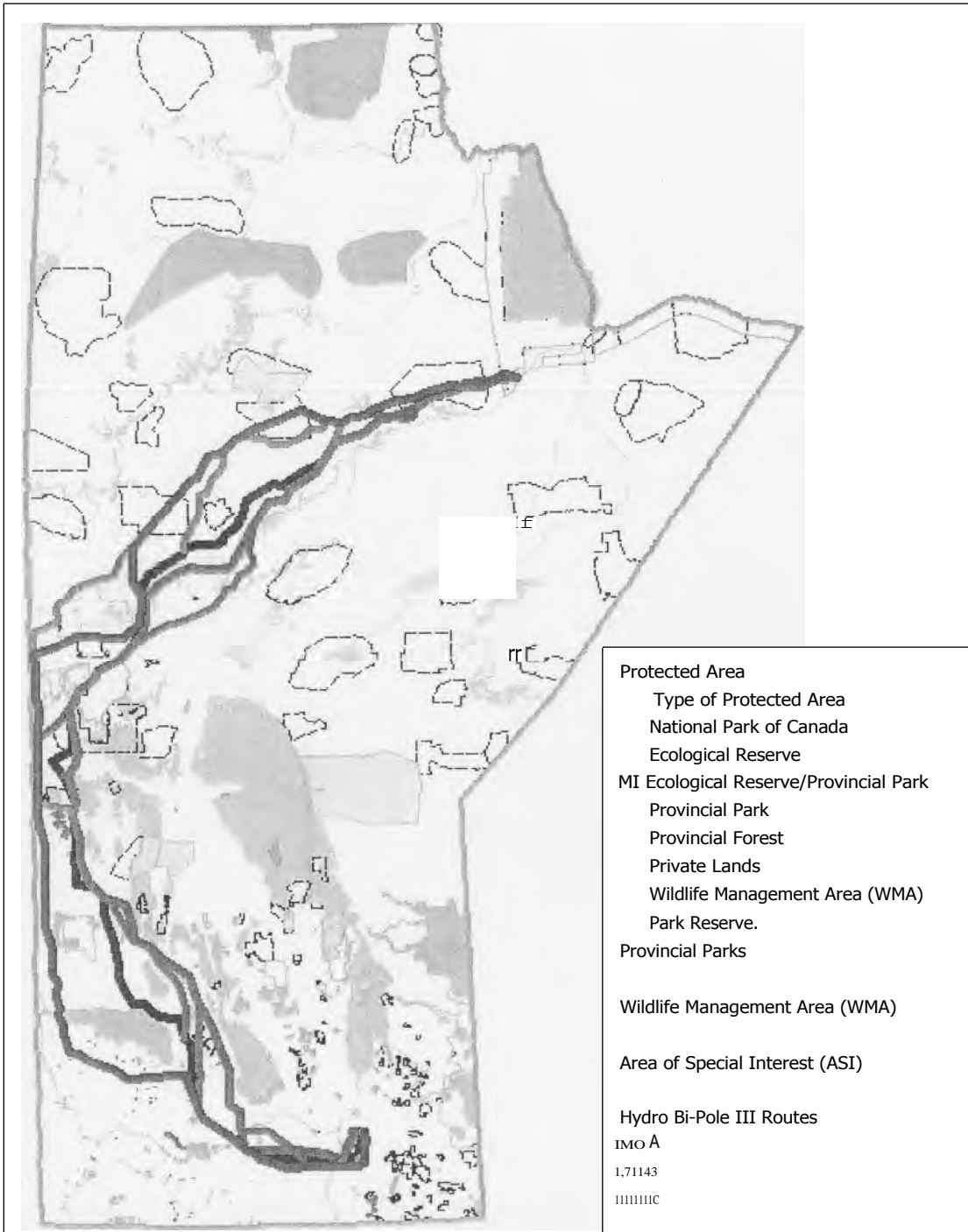
To establish protected areas, the Protected Areas Initiative follows a specific scientific process, based on sound ecological principles and criteria. The Protected Areas Initiative has adopted an "enduring features" approach to assess the adequacy of existing protected areas and to identify lands that would best complete natural region representation. Each natural region is divided into units called enduring features based on surficial geology, soil type, and terrain features. These features are relatively stable over time and support unique groupings of biological organisms.

"Representation" is a term reflecting the proportion of each enduring feature that is protected, and the confidence that ecological integrity is likely to be maintained over time. Representation is said to be Adequate, Moderate, Partial or Not Captured based on the rating system proposed by the World Wildlife Fund Canada's Endangered Spaces Campaign in 1995.

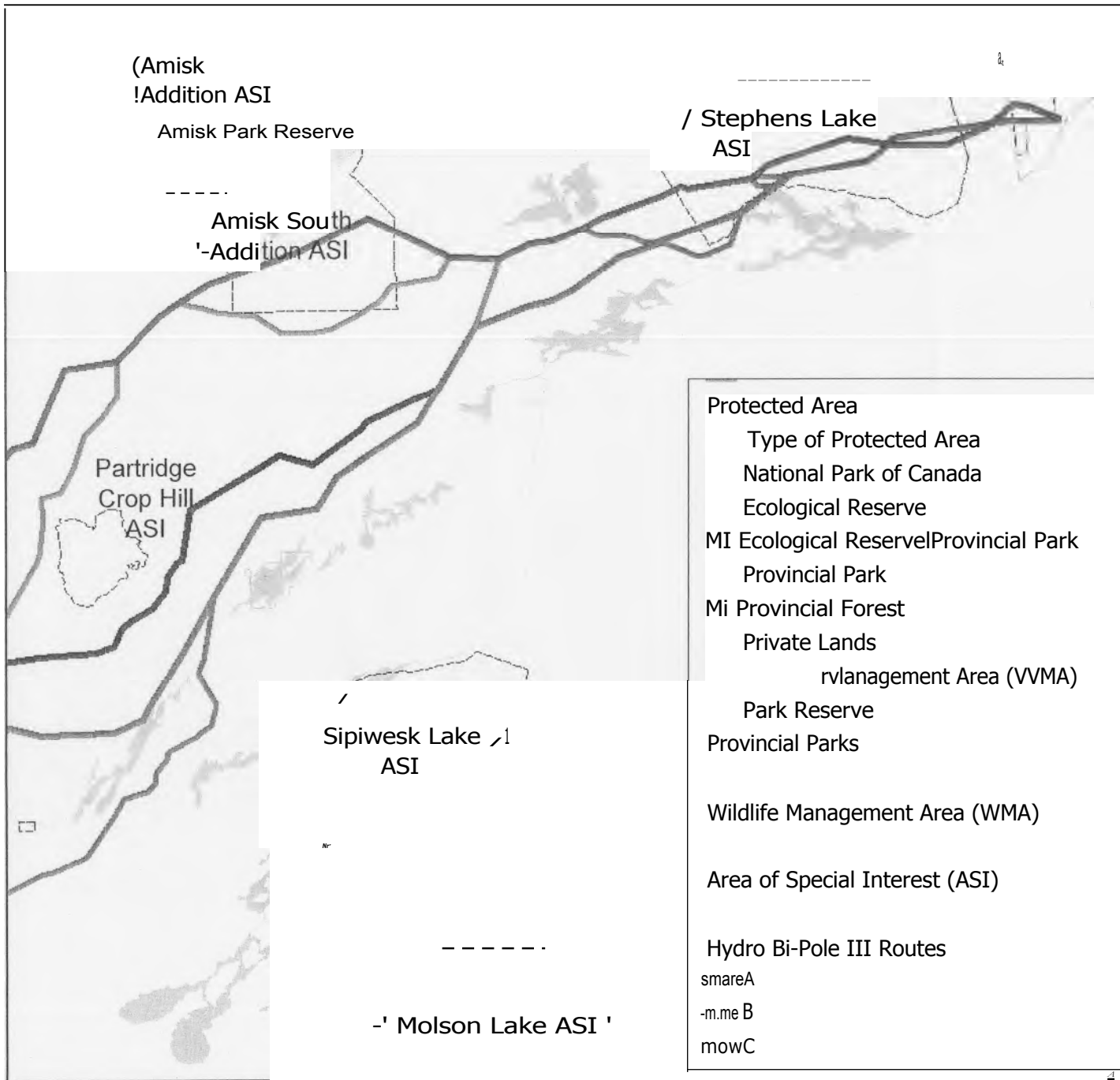
Areas of Special Interest (ASI) are selected to represent the enduring features found within a natural region that still need to be captured to achieve adequate representation. These are study areas for discussion purposes and they are not protected in any formal manner.

When establishing boundaries of candidate protected areas from within ASIs, features identified from scientific surveys or through local and traditional knowledge, are considered. Areas supporting rare or endangered plant and animal species, unusually high biodiversity, extremely sensitive sites and significant distinct wildlife resources are important to consider.

Please visit the Manitoba Land Initiative (MLI) website <https://m1i2.gov.mb.ca/> to download electronic versions of designated Crown lands i.e. Protected Areas, Wildlife Management Areas (WMA), Provincial Parks, Provincial Forests, Community Pastures, etc.



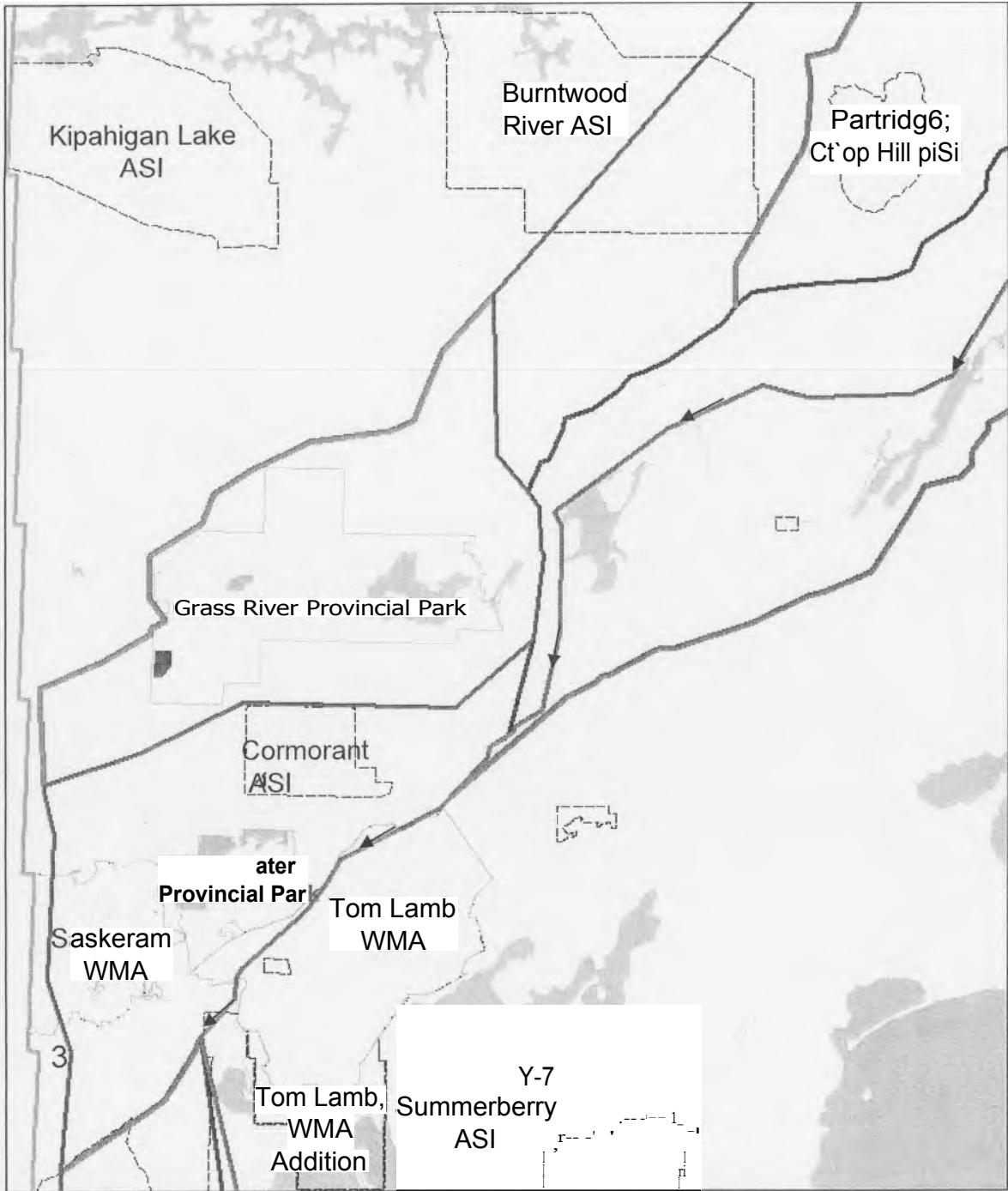
Protected Areas Initiative's (PAI) Review of Alternative Bipole III Routes A, B, and C



**See next slide
for table.**

Overview

| Area of Special Interest (ASI) NAME | Route | Support (TBD = To Be Determined) | Initial Concerns Identified | Additional Comments | Detailed Concerns (Pending) |
|-------------------------------------|---------|----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|
| Stephens Lake ASI | A, B, C | No | PAI would not support any of the 3 proposed routes as they all run through the middle of the ASI causing fragmentation of the habitat. All three routes impact several rare enduring features. The lines also falls well within our 1 mile buffer zone provided to Hydro. | All three proposed routes have some impact on Stephens Lake ASI. Stephens Lake ASI is important as it captures the confluence of 4 Natural Regions. Transition zones tend to contain species from both zone types thereby leading to greater diversity of species. These species are living at the edge of their tolerance for the conditions, they're robust and may be more likely to survive change. The protection of Stephens Lake ASI would provide a significant increase in representation for the affected natural regions. | |
| Amisk South Addition ASI | A | No | PAI would not support Route A as it runs through the middle of the ASI causing fragmentation of the habitat. Route A cuts through a single enduring feature. This feature is large, but a more detailed analysis is required to determine the full impact of this Route. | All three Routes between Stephens Lake ASI and Amisk South Addition crosses through a single enduring feature which is large in size and has potential for adequate protection. However a more detailed analysis is required to determine the full impact of these proposed routes to this single enduring feature. | |

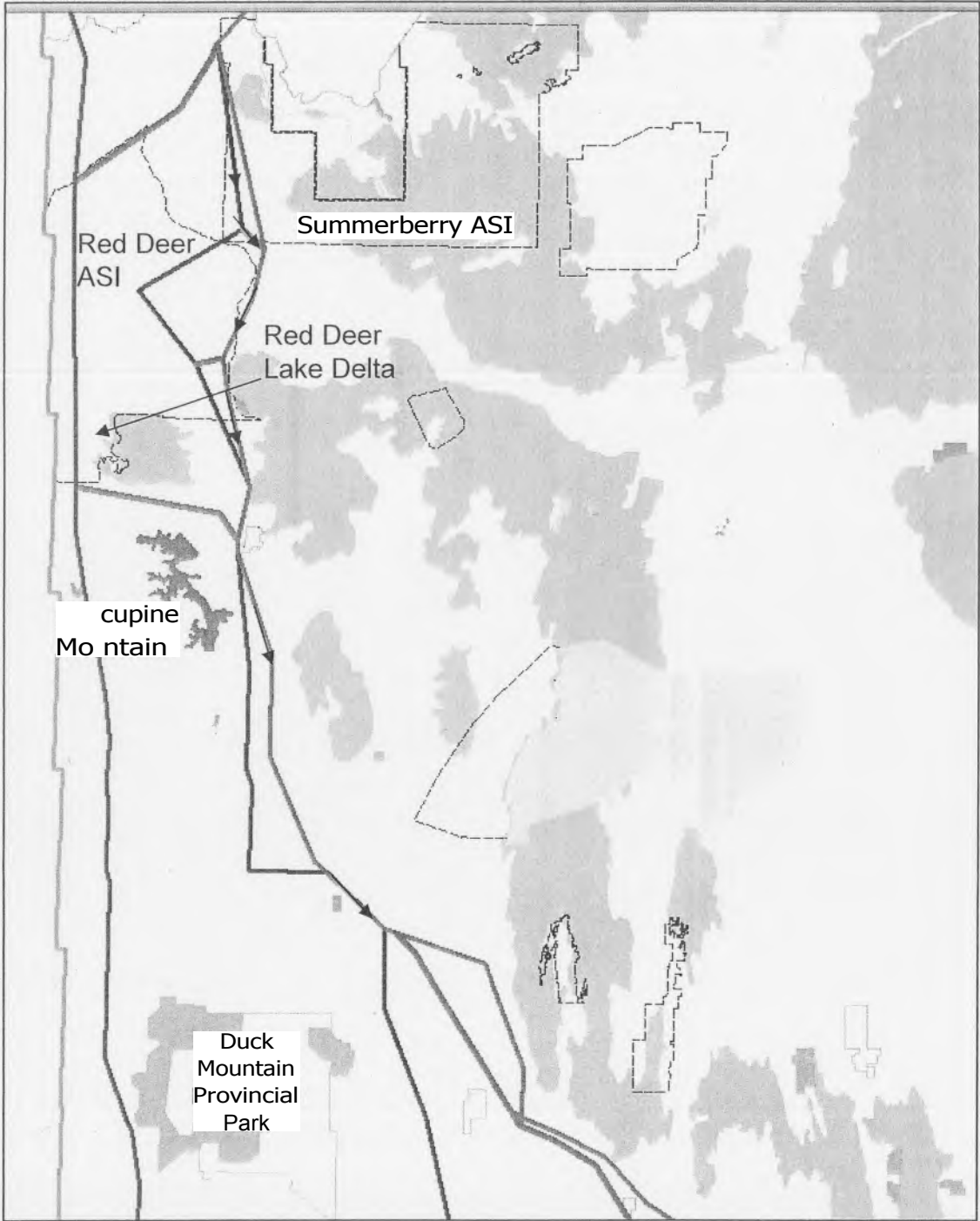


See next slide for table.

- Protected Area
- Type of Protected Area
 - National Park of Canada
 - Ecological Reserve
 - N** Ecological Reserve/Provincial Park
 - Provincial Park
 - Provincial Forest
 - M.** Private Lands
 - Wildlife Management Area (WMA)
 - Park Reserve
 - Provincial Parks
 - Wildlife Management Area (WMA?)
 - Area of Special Interest (IASI)
 - F-1
 - Hydro Bi-Pole III Routes
 - troroA
 - wasec

| Area of Special Interest (ASI) NAME | Route | Support (TBD = To Be Determined) | Initial Concerns Identified | Additional Comments | Detailed Concerns (Pending) |
|--------------------------------------------|--------------|-----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|
| Burntwood River ASI | A | No | PAI would not support Route A proposed route as it runs through the middle of the ASI causing fragmentation of the habitat. Route A also cuts through two rare enduring feature occurrences. | | |
| Grass River Provincial Park | A | No | North Route A (light pink) may impact the west side of the park, and comes close to the protected area located in the west side of the park. | | |
| Cormorant ASI | A | TBD | Touches the northern boundary of this ASI. | These concerns may change following the results of the Saskatchewan River Delta (SRD) Planning exercise. | |
| Clearwater Lake Provincial Park | B | TBD | The SRD planning exercise has identified an addition to the park on the east side. | PAI requires more analysis before a final decision can be made. These concerns may change following the results of the SRD planning exercise. | |
| Saskeram WMA ASI | A | TBD | Route A disturbs a large amount of intact landscape. The SRD planning exercise has identified this ASI as a potential protected area. Saskeram WMA is legally designated but not currently protected. Route A also crosses several rare/single enduring features. | PAI requires more analysis before a final decision can be made. These concerns may change following the results of the SRD Planning exercise. | |
| Tom Lamb WMA ASI | B | TBD | The SRD planning exercise has identified this legally designated Tom Lamb WMA (which is also an ASI) as potential protected area. | PAI requires more analysis before a final decision can be made. These concerns may change following the results of the SRD Planning exercise. | |

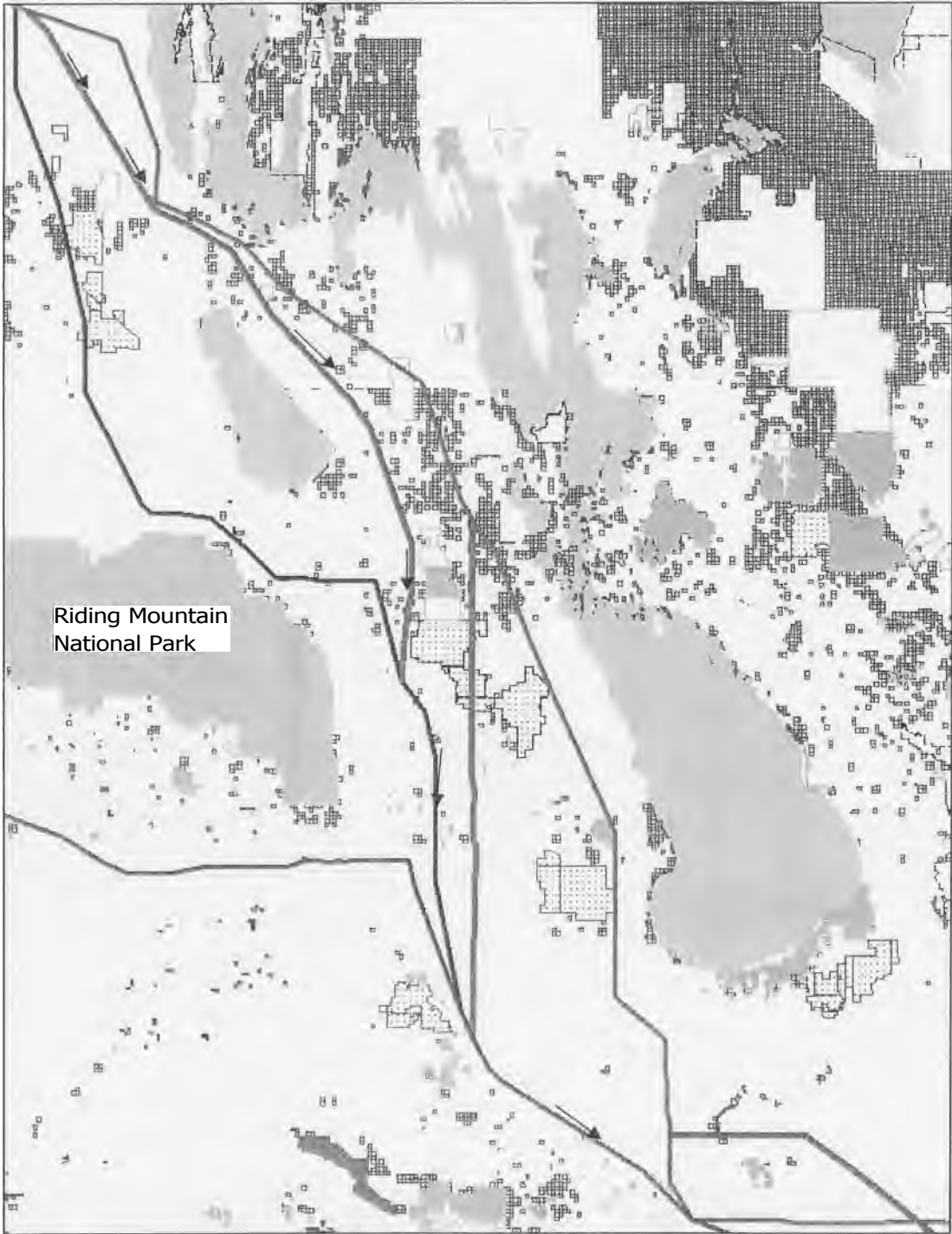
**See next slide
for table.**



- Protected Area
 - Type of Protected Area
 - National Park of Canada
 - Ecological Reserve
 - 1111 Ecological Reserve/Provincial Park.
 - Provincial Park
 - PN Provincial Forest
 - Private Lands
 - Wildlife Management Area (WMA)
 - Park Reserve
- Provincial Parks
- Wildlife Management Area (WMA)
- Area of Special Interest (ASIA)
- Hydro Bi-Pole III Routes imp A
- mac

Overview

| Area of Special Interest (ASI) NAME | Route | Support (TBD = To Be Determined) | Initial Concerns Identified | Additional Comments | Detailed Concerns (Pending) |
|-----------------------------------------------------|-------|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|
| Summerberry ASI | B, C | TBD | Route C and B runs through a proposed corridor linking Summerberry ASI to Red Deer ASI. | PAI requires more analysis before a final decision can be made. These concerns may change following the results of the SRD Planning exercise. | |
| Red Deer ASI | A | TBD | Route A disturbs a large amount of intact landscape, however, mining exploration permits have been granted in this area. This route also clips the west edge of the proposed Red Deer Lake Delta located at the southern extremity of this ASI. This delta has been identified for protection through the SRD planning exercise. | PAI requires more analysis before a final decision can be made. These concerns may change following the results of the SRD Planning exercise. | |
| Red Deer ASI | B | TBD | Through the PAI process to date, it has been expressed that Hydro should follow existing infrastructure instead of disturbing intact land. | If Hydro decides to follow existing infrastructure (route B) it is important to avoid the coastal wetlands and salt flats that occur near this route and consider impacts to caribou. | |
| Red Deer ASI | C | NO | PAI does not support this portion of Route C as it diverts into Red Deer ASI. This ASI is far along it's in review process. PAI recommends avoiding coastal wetlands and salt flats in and south of the Red Deer ASI. | PAI requires more analysis before a final decision can be made. These concerns may change following the results of the SRD Planning exercise. | |
| Route A through Porcupine Mountain to Duck Mountain | A | NO | PAI recommends using routes which do not cut through Provincial Forests. The Armitt Canyon in Porcupine Mountain is pristine in nature and appears to lie along this route. | | |
| Porcupine Mountain to Duck Mountain | B, C | B-TBD C NO | Many rare/single enduring features occur along this section of Route B. These enduring features have no representation so a closer review is urged. Route C runs along side/within a community pasture. PAI has been working with PFRA and Manitoba Agriculture towards possible inclusion of some community pastures in the protected areas network. This route is not supported. | PAI asks that the line be run as close to existing infrastructure as possible to minimize disturbance to the enduring features therefore allowing for possible protection in the future. Much of this area is privately owned and not available for protection | |



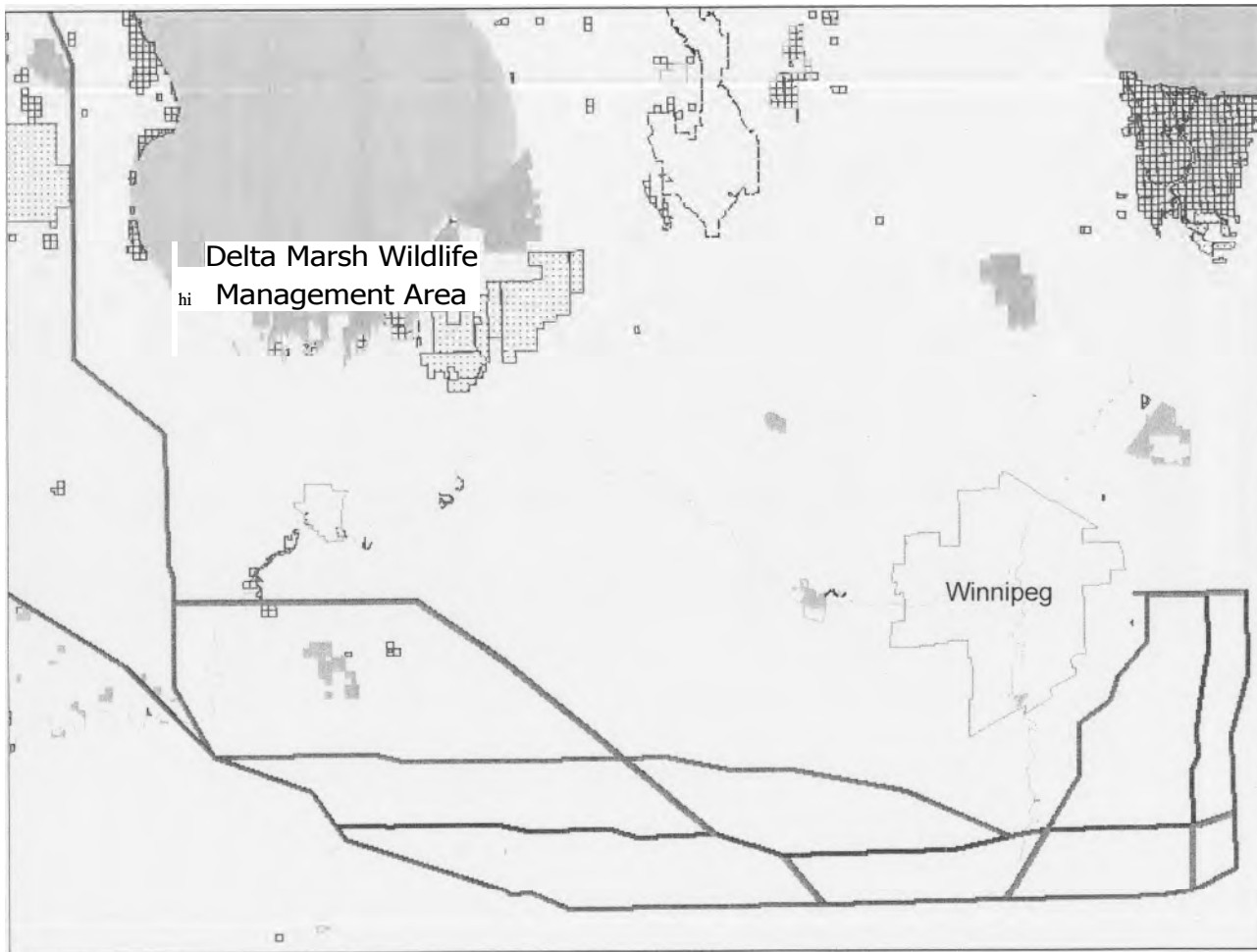
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for table.**

| |
|---------------------------------------|
| Protected Area |
| Type of Protected Area |
| National Park of Canada |
| Ecological Reserve |
| in Ecological Reserve/Provincial Park |
| Provincial Park |
| MI Provincial Forest |
| Private Lands |
| Wildlife Management Area (WMA) |
| Park Reserve |
| Provincial Parks |
| Wildlife Management Area (WMA) |
| Area of Special Interest (ASO) |
| E-1 |
| Community Pasture |
| Hydro Bi-Pole III Routes |
| enusA |
| amoB |
| ifflowc |

Overview

| Area of Special Interest (ASI) NAME | Route | Support (TBD = To Be Determined) | Initial Concerns Identified | Additional Comments | Detailed Concerns (Pending) |
|--------------------------------------|---------|------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|
| Duck Mountain to Riding Mountain | C | No | Crosses through an land corridor that Nature Conservancy of Canada, Manitoba Habitat Heritage Corporation (MHHC) and Ducks Unlimited Canada (DUC) are currently endeavoring to protect. | | |
| Duck Mountain to Riding Mountain | B | Support with some concerns | Route B in the north portion of this area is more direct and reduces the impact on the land. However it does cross one rare enduring feature. Route B (middle section) crosses alongside an unprotected WMA. This route should avoid this WMA. Again Route B has less impact and avoids most of our proposed agro-ASI. | | |
| Duck Mountain to Riding Mountain | A | No | PAI recommends using routes which do not cut through Provincial Forests. | | |
| South of Riding Mountain | A, B, C | Some Concerns | If possible move route slightly to north east to avoid protected areas and single enduring feature. | | |
| South of Delta Marsh to Winnipeg | A | Some Concerns in western portion of this area. | There are several small legally protected WMAs in the area which must be avoided. A 1 mile buffer from any existing protected area is requested to reduce any adverse impacts. | Route B is the most direct route therefore reducing it's overall impact on the land. It does not cross any protected areas, ASIs, designated lands, AgroASIs, etc. This route also has the least impact on the rare and single enduring features. | |

**See next slide
for table.**



Protected Area

Type of Protected Area

National Park of Canada

Ecological Reserve

111 Ecological Reserve/Provincial Park

Provincial Park

IP Provincial Forest

M4 Private Lands

Wildlife Management Area (NMA)

Park Reserve

Provincial Parks

Wildlife Management Area (WMA)

Area of Special Interest (A50)

Community Pasture

| |

Hydro Ei-Pole III Routes

AMINO A

IMO B

— C

Overview

| Area of Special Interest (ASI) NAME | Route | Support (TBD = To Be Determined) | Initial Concerns Identified | Additional Comments | Detailed Concerns (Pending) |
|-----------------------------------------|-------|------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|
| South of Delta Marsh to Winnipeg | A | Some Concerns in western portion of this area. | There are several small legally protected WMAs in the area which must be avoided. A 1 mile buffer from any existing protected area is requested to reduce any adverse impacts. | Route B is the most direct route therefore reducing it's overall impact on the land. It does not cross any protected areas, ASIs, designated lands, AgroASIs, etc. This route also has the least impact on the rare and single enduring features. | |

Blunt, Bryan (CON)

From: Reichelt, Raymond (CON)
Sent: Tuesday, February 02, 2010 7:58 AM
To: Blunt, Bryan (CON)
Subject: FW: Manitoba hydro - Bi Pole Transmission project file 5433.00

Hi Bryan

I have reviewed the *Manitoba Hydro - Di Pole III Transmission Project — Draft Environmental Assessment Scoping Document* and have a few comments. My comments are not so much directed at the scoping document, which by its nature is fairly limited but rather what I hope will be in the final environmental assessment.

Our experience with large scale construction projects as they affect the programs administered out this office have shown that the following things are likely to be of concern:

Fuel Storage and Handling: is covered under the *Dangerous Goods Handling & Transportation Act*. The environmental assessment document should state that Manitoba Hydro will ensure that both its employees and contractors abide with the terms of the *Storage and Handling of Petroleum Products and Allied Products Regulation*.

Hazardous Waste Generation: under the *Dangerous Goods Handling & Transportation Act, Generator Registration and Carrier Licencing Regulation*; the environmental assessment document should indicate that Manitoba Hydro will identify potential generation of hazardous wastes and ensure that proper procedures are in place to handle these materials.

Potential Environmental Accidents: the environmental assessment document should reference the *Environmental Accident Reporting Regulation* of the *Dangerous Goods Handling & Transportation Act* and discuss the emergency plans that Manitoba Hydro and its contractors will follow in the event of an accident.

Temporary Campsites: may present problems with the *Onsite Wastewater Management Systems Regulation* of the *Environment Act*. Any new septic field or holding tanks installed to service these camps will be required to meet the requirements of the *Onsite Wastewater Management Systems Regulation* and this should be reflected in the environmental assessment document.

Solid Waste Management: is covered by the *Incinerator Regulation*, the *Litter Regulation* and the *Waste Disposal Grounds Regulation* of the *Environment Act*. Manitoba Hydro and its contractors are required to abide by the terms of these regulations — the environmental assessment document should state that illegal dumps, poor control of waste (litter) and improper incineration of wastes are expressly forbidden to Manitoba Hydro and its contractors.

Call me if you have any questions.

Raymond Reichelt, P. Eng. 007
Environment Officer
Manitoba Conservation
Environmental Operations / Central Region
309 - 25 Tupper Street N
Portage la Prairie MB R1N 3K1

Tel. (204) 239-3608

2010-02-02

Cell (204) 871-4297
Fax (204)235'3215

From: Ritchie, Glenn (CON)
Sent: Monday, January 11, 2010 1:59 PM
To: Reichelt, Raymond (CON)
Subject: FW: Manitoba hydro - Bi Pole Transmission project file 5433.00

Report directly to Brian

From: Lee, Cliff (CON)
Sent: Monday, January 11, 2010 1:55 PM
To: Ritchie, Glenn (CON)
Subject: RE: Manitoba hydro - Bi Pole Transmission project file 5433.00

I am only concerned with Central Region, copy of proposal has also been forwarded to Tim Prawdzik for comment.

From: Ritchie, Glenn (CON)
Sent: Monday, January 11, 2010 11:46 AM
To: Lee, Cliff (CON); Reichelt, Raymond (CON)
Cc: Webber, Randy (CON)
Subject: RE: Manitoba hydro - Bi Pole Transmission project file 5433.00

This file starts at the generating plant and travels through Thompson, The pas Dauphin Brandon Plp and VVpg office districts. .

From: Lee, Cliff (CON)
Sent: Monday, January 11, 2010 11:12 AM
To: Ritchie, Glenn (CON); Reichelt, Raymond (CON)
Subject: RE: Manitoba hydro - Bi Pole Transmission project file 5433.00

I would expect Raymond's comment (bulk of the project) will likely mirrored the concerns (If any) of other offices. We can decide then whether we need additional review. Your thought?

From: Ritchie, Glenn (CON)
Sent: Monday, January 11, 2010 9:26 AM
To: Reichelt, Raymond (CON)
Cc: Lee, Cliff (CON)
Subject: Manitoba hydro - Bi Pole Transmission project file 5433.00

I am forwarding the proposal for the above mentioned project. Please review and reply directly to Bryan Blunt unless directed otherwise.

Cliff - as this one involves a number of offices does Don want a coordinated reply or from each office involved.

Ray will be the contact for this area.

2010-02-02

DATE: February 2, 2010

Memorandum

TO: Bryan Blunt
Environment Officer
Environmental Assessment and
Licensing Branch
Manitoba Conservation
123 Main Street, Suite 160
Winnipeg, Manitoba R3C 1A5

FROM: William Weaver, M.Sc.
Environmental Review Officer
Manitoba Water Stewardship
200 Saulteaux Crescent, Box 14
Winnipeg, Manitoba R3J 3W3

TELEPHONE: 945-6395
FACSIMILE: 945-7419

CC: Wendy Ralley
Laureen Janusz
Gilbert Bushati
Ed MacKay

SUBJECT: **ENVIRONMENT ACT** PROPOSAL FILE: 5433.00
ENVIRONMENTAL ASSESSMENT SCOPING DOCUMENT
MANITOBA HYDRO
BI-POLE III TRANSMISSION PROJECT

Manitoba Water Stewardship has reviewed the referenced file, forwarded for comment on December 22, 2009. The Department has the following comments:

- Manitoba Water Stewardship recommends to include the following in the Terms of Reference for an Environmental Assessment, for the proposed development:
 - o The proponent needs to be informed that Manitoba Water Stewardship's policy will not approve the drainage of semi permanent and permanent water bodies unless compensation or mitigation is approved. Manitoba Water Stewardship recommends minimizing impacts and footprints when working near or around wetlands.
 - o Identify all provincial or federally listed aquatic species, aquatic invasive species, and the potential to spread invasive species either during project construction or if access is increased to surface waters.

Date: February 2, 2010
Subject: *Environment Act* Proposal File 5433.00
Manitoba Hydro - Bi-Pole III Transmission Project
Environmental Assessment Scoping Document

- o There could be an increase in fishing pressure if surface waters are accessed, resulting from the proposed development. An environmental assessment should address these potential effects.

- o Identify any surface water and groundwater crossed by the line that are raw water sources for public water systems;
 - Note: The map, while small in scale, appears to show the new development running along a corridor north and west of Lake Winnipegosis, then west and south of Lake Manitoba. This corridor would bring the line close to the raw water sources for a number of public water systems located between the lakes and the Riding, Duck and Porcupine Mountain highlands.

- o Describe any potential effects the line may have on the quality or flow rate of any surface water and groundwater that are raw water sources for public water systems;

- o Nutrient contribution to surface water during the construction phase:
 - The proponent should implement efforts aimed at minimizing surface water runoff, sedimentation, nutrient contribution, and erosion to those areas where the transmission line crosses surface water, including rivers, streams, creeks, wetlands, and lakes. Given the close proximity to Lake Winnipeg, the proponent needs to be made aware of provincial efforts to reduce nutrient contributions to Lake Winnipeg. The proponent should work with the Lake Winnipeg Stewardship Board and, where applicable, local Conservation Districts towards nutrient reduction.

- o Wastewater management:

Date: February 2, 2010
Subject: *Environment Act* Proposal File 5433.00
Manitoba Hydro - Bi-Pole III Transmission Project
Environmental Assessment Scoping Document

- The proponent will need to manage sewage and other wastewater that is generated during the construction phase. This wastewater will need to be directed to an approved facility, ensuring that no wastewater is directed towards surface water.

o *The Water Rights Act* indicates that no person shall control water or construct, establish or maintain any "water control works" unless he or she holds a valid licence to do so. "Water control works" are defined as any dyke, dam, surface or subsurface drain, drainage, improved natural waterway, canal, tunnel, bridge, culvert borehole or contrivance for carrying or conducting water, that temporarily or permanently alters or may alter the flow or level of water, including but not limited to water in a water body, by any means, including drainage, OR changes or may change the location or direction of flow of water, including but not limited to water in a water body, by any means, including drainage. If a proposal advocates any of the aforementioned activities, an application for a Water Rights Licence to Construct Water Control Works is required. Application forms are available from any office of Manitoba Water Stewardship.

A contact person is Mr. Ed MacKay, C.E.T., Senior Water Resource Officer, Water Control Works and Drainage Licensing, Manitoba Water Stewardship, 1129 Queens Avenue, Brandon, Manitoba R7A 1L9, telephone: (204) 726-6226, email: ed.mackay@gov.mb.ca.

William Weaver, M.Sc.

DATE: February 9, 2010

TO: Bryan Blunt
Environmental Officer
Manitoba Conservation
Suite 160-123 Main Street
Winnipeg MB

FROM: Gordon Hill
Impact Assessment
Archaeologist
Historic Resources
Branch
Main Floor 213 Notre
Dame Avenue
Winnipeg MB
R3B 1N3
PHONE NO: (204) 945-7730

SUBJECT: ENVIRONMENT ACT PROPOSAL

YOUR FILE: 5433.00

MANITOBA HYDRO
BI-POLE III TRANSMISSION PROJECT
SCOPING DOCUMENT

I have reviewed the above-noted Scoping Document pursuant to the Environment Act. The Historic Resources Branch has concerns with regard to this project's potential to impact heritage resources. Section 7.5.6 outlines the proposed contents of the EIS regarding Heritage Resources and the intended detail to avoid and/or minimize adverse effects on Heritage Resources.

If at any time significant heritage resources are recorded in association with these lands during development, the Historic Resources Branch may require that an acceptable heritage resource management strategy be implemented by the developer to mitigate the affects of development on the heritage resources.

C. Gordon Hill

DATE: February 9, 2010

TO: Brian Blunt
Environmental Stewardship
Manitoba Conservation
123 Main Street, Suite 160
Winnipeg MB R3C 1A5

FROM: David Jopling
Policy Planner
Provincial Planning Services
Department of Local Government
604 - 800 Portage Avenue
Winnipeg MB R3G 0N4

rEB 1 1 2010

PHONE: 945-8353

SUBJECT: Manitoba Hydro — Bi-Pole III Transmission Project: A Major Reliability Initiative.
Environment Assessment Scoping Document. Client File No. 5433.00

The Department of Local Government staff has reviewed the above-noted proposal. Land use planning documents (Development Plans) have policies and maps with land use designations that help guide planning decisions within each community, in accordance with *The Planning Act*. Reference to these documents should be made.

The project will pass through a large number of municipal jurisdictions and a clear detailed map (digital GIS option recommended) of the alternate transmission lines should be presented to ensure an accurate evaluation of the impact of the project on specific parcels of land. The scoping document should provide maps that identify all land uses including individual houses, community infrastructure and facilities along each potential route. It should also define suitable separation distances from these land uses, line development criteria or other mitigating criteria it will be considering. This will help avoid conflict with local residents and undue economic costs to existing community infrastructure. The scoping document alludes to these items in various places but does not directly indicate, in precise language, that this will be done.

Please also explain how Manitoba Hydro is going to work with or compensate the private owners who are impacted by placement of the new lines once the decision on a final route is made?

Thank you for the opportunity to comment.



David Jopling

cc. Terry Pearce, Community Planning Services (CPS) Brandon
Derm English, CPS Dauphin
Kate Cruickshank, CPS Thompson
Chris Leach, CPS Portage

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Blunt, Bryan (CON)

From: Asselstine, Craig (CON)
Sent: Wednesday, February 10, 2010 3:42 PM
To: Blunt, Bryan (CON)
Subject: FW: BP3 Scoping Document

The Region has a few comments for your consideration:

Section 2.0 Regulatory and Policy Framework — Is there a reason why the Wildlife Act and Forest Act are not listed with other Prey. Leg.? It does go on to say the EIS would contain a comprehensive list of applicable legislation.

Section 3.1 Scope of Project — It lists 'Disposition of trees cleared from right-of-way', we suggest adding 'to ensure maximum use of merchantable timber'.

Section 7.4.3 — Construction — Although it may fit in with one of the other bullets add 'Measures to preserve, recover, and market merchantable timber from ROW clearing.

Section 10.0 — Monitoring and Follow-up Program - The document is quite thorough in describing the process and considerations for conducting the environmental assessment for the BP3 project and preparing the EIS. It is apparent that a great deal of data and public input will be gathered through the environmental assessment process described in the document but it is not clear how that information will be weighed and considered in choosing the preferred route. In section 10.0 of the document, *Monitoring and Follow-up Program* Hydro commits to continuing environmental affects monitoring for the lifespan of the project. Our experience would suggest that this long term monitoring as outlined in the EnvPP, is typically confined to the project area (T-line ROW) itself and immediate adjacent environment but does not consider impacts of the project to the more distant environment. Specifically, in the case of woodland caribou, the potential effects of the T-line on the caribou populations that traverse it may require monitoring for a longer period than the study recently initiated that has a duration of 3-5 years. In consideration of this perhaps wording could be added at the end of the first paragraph to reflect the need for monitoring at spatial and temporal scales sufficient to fully assess project affects on the larger environment.

Has Forestry Branch provided any comment as a large portion of the ROW will occur in existing Forest Management Licence areas?



Infrastructure and Transportation
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February 11, 2010

Tracey Braun
Director
Environmental Assessment & Licensing Branch
Manitoba Conservation
123 Main St., Suite 160
Winnipeg, MB R3C 1A5

RE: Manitoba Hydro — Bipole III Transmission Project : A Major Reliability Initiative
Client File No.: 5433.00

Dear Director Braun:

We have reviewed the above mentioned project requested in your letter dated December 22, 2009 and we have no concern regarding the proposed development at this time. However, we would like to take the opportunity to review the Environmental Impact Assessment document once completed to identify areas of concern particular to the location of the structures in relation to Department roads and right-of-way.

Thank you very much for providing us the opportunity to review the document.

Yours truly,

Kimber Osi, M.Sc.,P.Eng.
Manager of nvironmental Services

Canadian Environment
Assessment Agency

101 - 167 Lombard Avenue
Winnipeg, Manitoba R3B 0T6

Agence canadienne
d'évaluation environnementale

167, avenue Lombard, bureau 101
Winnipeg (Manitoba) R3B 0T6

February 16, 2010

CEAA File No.: MP 2008-021
MC File No.: 5433.00

Mr. Bryan Blunt
Manitoba Conservation
Environmental Approvals Branch
160 - 123 Main Street
Winnipeg, Manitoba R3C 1A5

Dear Mr. Blunt:

SUBJECT: Bipole III Transmission Project

I am responding to the December 22, 2009 letter from Ms. Tracey Braun, Director, Environmental Assessment and Licensing Branch, to Dan McNaughton, Director, Prairie Region, Canadian Environmental Assessment Agency, regarding the project identified above.

I can confirm that the project information that was provided has been forwarded to federal departments with a potential interest. Specifically, federal departments were requested to review Manitoba Hydro's Draft Environmental Assessment Scoping Document and identify any additional information that should be provided in the Environmental Impact Statement beyond what is described in the Scoping Document.

The following comments were provided by Fisheries and Oceans Canada:

1) Overall, the Draft Environmental Scoping Document identifies a wide range of information that is to be provided in the EIS which will assist in DFO's review of the project pursuant to the habitat provisions of the *Fisheries Act*. Upon receipt of the EIS further information may or may not be needed to determine DFO's regulatory role and responsibilities under the *Fisheries Act*, *Species at Risk Act* (SARA), and the *Canadian Environmental Assessment Act* (CEAA).

2) DFO strives to have proponents avoid causing a harmful alteration, disruption or destruction (HADD) of fish and fish habitat through appropriate design of their project and the implementation of mitigation measures. However, in the event that a HADD cannot be avoided, DFO may consider issuing an authorization. If an authorization is likely to be issued for a project under the *Fisheries Act*, then DFO must ensure that an assessment under the CEAA is completed and require that the proponent meet our policy objective of no net loss in the productive capacity of fish habitat as well as compliance under the SARA.

3) DFO has a number of Operational Statements that may apply to watercourse crossings and other works or undertakings in or near water. We encourage the proponent to review the Operational Statements that are available and incorporate these into your plans. The most recent versions of the Operational Statements in Manitoba

can be found at the following link: <http://www.dfo-mpo.gc.ca/regionscentral/habitatioseolprovinces-territoires-territoiresknb/index-enc.htm>.

4) If the watercourse crossings do not meet the requirements of an Operational Statement, then DFO requires sufficient information in order for us to complete a review. DFO has created a "Proponent's Guide to Information Requirements under the Habitat Provisions of the Fisheries Act" and our "Request for Review under the Habitat Provisions of the Fisheries Act Form" that you may use to assist you in the design and application proposal (EIS) for your project. These documents may be found at the following link: http://www.dfo-mpo.gc.ca/oceans-habitat/habitatiwater-eaulindex_e.asp.

5) Early engagement with DFO would be appropriate to discuss the project prior to submission of the EIS. DFO would be interested in seeing a monitoring report from the recently constructed Wuskwatim transmission line. A monitoring report may already be available from that project. Discussions around previous works, watercourse crossings, construction techniques, mitigation measures, contingency plans, site photos, etc., will be beneficial for planning purposes.

6) Further details can be obtained from the DFO contact (see attached contact list).

The following comments were provided by Transport Canada:

1) It is advisable to include as many of the application requirements for a *Navigable Waters Protection Act* Approval as available, beyond what is listed in the MPMO Project Description Guide.

2) Section 3.1 of the Scoping Document does not specifically list "construction of works built or placed in, on, over, under, through or across any navigable water", but later sections in the Scoping Document (7.4.2 and 7.4.3) indicate that this will be addressed.

3) Comments from the public (as per paragraph 16(1)(c) of the CEAA) should be included in the scope of assessment of the project (see section 3.2 of the Scoping Document).

4) If the *Minor Works and Waters (Navigable Waters Protection Act) Order* is not applicable, then an application to the Navigable Waters Protection Program may be required.

The following comments were provided by Indian and Northern Affairs Canada:

1) It would be helpful to have knowledge of all potentially affected Aboriginal groups who may use the area but are not found within the project's footprint.

2) In collecting Aboriginal Traditional Knowledge on traditional land and resource use and cultural and heritage resources, the proponent should collect, consider and incorporate Metis and First Nation community data separately so that the effects and benefits of the project on both groups may be tracked.

3) The proponent should demonstrate how Metis and First Nation members and representatives each helped to identify and evaluate alternate routes.

4) The proponent should clearly indicate who it spoke with, which Aboriginal group they represented, the nature of the meeting and the concerns raised. In addition to First

Nations' Chief and Council, the proponent should speak with the Manitoba Metis Federation as directed by the Office of the Federal Interlocutor for Metis and Non-Status Indians.

The following comments were provided by Health Canada:

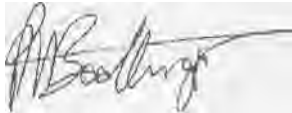
1) Section 7.5 of the Scoping Document indicates that information will be provided on air quality, potable ground water and country food resources in the project area. With regards to potential effects to human health, it is suggested that information also be provided regarding any surface waters used for drinking, baseline noise and EMF environment for use in the proposed EIS.

2) Please see the attached "Useful Information for Environmental Assessments" for guidance with information suggested for health impact assessment in environmental assessments (relevant to Health Canada's areas of expertise).

In addition to the above comments from federal departments, the attached "Guide to Preparing a Project Description for a Major Resource Project", prepared by the Major Projects Management Office, describes the information that will be required in order for the federal government to determine its interest in the project.

If I can be of further assistance, please feel free to contact me by telephone at (204) 984-8020 or by e-mail at: peter.boothroyd@ceaa-acee.pc.ca.

Sincerely,



Peter Boothroyd
Project Manager

Attach.

c.c.: Jeff Moyer, Fisheries and Oceans Canada
Holly Poklitar, Transport Canada
Daniel Benoit, Indian and Northern Affairs Canada
Rick Grabowecky, Health Canada

Federal Contacts List

Project: Bipole III Transmission Project
CEAA File No.: MP2008-021
MC Client File: 5433.00

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USEFUL INFORMATION FOR ENVIRONMENTAL ASSESSMENTS

This document outlines information that would be beneficial to include in environmental assessment documents when requesting Health Canada's advice as a federal authority under subsection 12(3) of the *Canadian Environmental Assessment Act* (the Act), and/or under provincial/territorial environmental assessment processes. For more information on the Act and Canada's federal environmental assessment process, please refer to the Canadian Environmental Assessment Agency.

Purpose of this document: To provide assistance to stakeholders involved in the environmental assessment process, and to facilitate the preparation and review of environmental assessments in a consistent and effective manner. The information contained herein is directed towards federal government departments that are responsible authorities, and is intended to assist them in guiding the proponent in the early stages of the environmental assessment process. Provincial and territorial agencies may also find this information useful when requesting Health Canada's advice on their environmental assessments.

In the context of subsection 12(3) of the Act, Health Canada currently has expertise in the following biophysical areas related to human health:

1. Air quality effects
2. Contamination of country foods (fish, wild game, garden produce, berries, etc.)
3. Drinking and recreational water quality
4. Radiological effects
5. Electric and magnetic fields effects
6. Noise effects
7. Human health risk assessment (HHRA) and risk management
8. Federal air, water and soil quality guidelines/standards used in HHRAs
9. Toxicology (multimedia - air, water, soil)
10. First Nations and Inuit health

In order to obtain Health Canada's advice, responsible authorities, panels, mediators and/or provincial/territorial authorities involved in environmental assessment should submit a written request for Health Canada's expertise regarding the potential effects of a proposed project on human health. If the responsible authority is uncertain which of the above-listed biophysical areas is applicable to a proposed project, Health Canada can provide advice on this, or a review of each area. To help expedite Health Canada's reviews of technical study/environmental assessment documents, it is useful for the written request to indicate which sections of the documentation are to be reviewed by Health Canada, and/or pose specific questions to be addressed by Health Canada.

Note that Health Canada's role under subsection 12(3) of the Act is advisory only. The responsible authority (or the provincial/territorial authority) determines how the advice provided by Health Canada will be used in the environmental assessment process, and the responsible authority (or the provincial/territorial authority) makes all decisions related to the environmental assessment of the project. In areas of jurisdictional overlap, it is the responsible authority's (or the provincial/territorial authority's) responsibility to determine whether Health Canada advice is applicable.

Health Canada advises that consideration be given to the potential effects on human health for all phases of a proposed project (i.e. construction, operation, modification, decommissioning and abandonment), and that baseline data, predicted project values, and cumulative effects be considered,

USEFUL INFORMATION FOR ENVIRONMENTAL ASSESSMENTS

as appropriate. Health Canada suggests that all information relevant to human health be documented in one section of the environmental assessment, and that all relevant assumptions, reference values, models, equations and reference citations be clearly stated.

The following sections of this document, ordered by area of expertise, provide guidance on the key elements that would be beneficial to Health Canada in providing advice on the assessment of the potential effects of a proposed project on human health. It is important to note that not all items listed in each area of expertise are applicable to all types of proposed development projects. Health Canada may request additional information in order to provide advice on a project-specific basis.

Health Canada is also developing detailed guidance documents in the following areas of expertise: air quality effects, the contamination of country foods, drinking and recreational water quality, noise effects, and human health risk assessment (the guidance documents will be available online when they are finalized: <http://www.hc-sc.gc.ca/ewh-semt/pubs/ieval/index-eng.php>).

1) Air Quality Effects

In an assessment of potential changes in air quality, it is advisable to consider local, regional, and where appropriate, long-range impacts on air quality during all phases of the project. It is advisable to also consider the following:

- An inventory of all potential contaminants and emissions from the proposed project: criteria air contaminants [i.e. sulphur oxides (SO_x), nitrogen oxides (NO_x), particulate matter (PM) including total PM, PM_{10} , and $PM_{2.5}$, volatile organic compounds (VOCs), carbon monoxide (CO), ammonia (NH_3), ground-level ozone (O_3), and secondary particulate matter (secondary PM)]; air pollutants on the *List of Toxic Substances* in *Schedule 1* of the *Canadian Environmental Protection Act, 1999* (CEPA Registry, 1999); diesel PM; and other possible contaminants.
- Information regarding the location of the project and the distance to all potential human receptors for different uses (residential, recreational, etc.) within the area affected by the project.
- A characterization of baseline levels of potential contaminants and emissions undergoing further assessment (i.e. before the project scenario), and a rationale for any project emissions not considered in the assessment.
- Assessments of the following scenarios: baseline alone (i.e. before the project scenario); project alone; project plus baseline; and cumulative (i.e. project plus baseline plus all other approved or reasonably foreseeable projects).
- A comparison of predicted project-related changes in ambient air quality to applicable air quality benchmarks relevant to human health (Canada-wide Standards, National Ambient Air Quality Objectives, provincial regulations, etc.), and a discussion of the potential effects on human health. Note that air quality criteria and standards should not be considered as "thresholds" below which health effects do not occur.
- Where modelling has been used, a description of the model and all assumptions that may affect the outputs.
- In cases where modelling results for the current project or measurements from similar projects predict exceedances or near exceedances of applicable air quality standards or guidelines, a discussion of the potential impacts on human health and a further level of assessment (e.g. a human health risk assessment), if appropriate.
- Information on mitigation measures that will be taken to minimize any negative impacts to air quality during all phases of the project. Examples of mitigation measures include: the use of properly maintained engines, the reduction of idling time, dust minimization practices, and the inclusion of pollution control devices (e.g. Cheminfo Services 2005).

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- A description of air monitoring plans and/or follow-up programs, if applicable.

Health Canada currently does not possess the expertise to provide advice on odour and health effects.

Please note that Health Canada does not verify air quality modelling results and assumes that correct and accepted and/or validated methods were used. Health Canada relies on the expertise of Environment Canada for the review of air quality modelling results and the provision of related advice. If errors and/or gaps in the modelling are noted by Environment Canada, it is suggested that revisions be made to address them as indicated by Environment Canada. If the revised results differ from the originally submitted results, it is advised that the report be resubmitted to Health Canada for review.

2) Contamination of Country Foods

Country foods, also known as traditional foods, include those foods trapped, fished, hunted, harvested or grown for subsistence or medicinal purposes, or obtained from recreational activities such as sport fishing and/or game hunting. Country foods do not include foods produced in commercial operations (large farms, greenhouses, etc.).

It is advisable to consider the following in an assessment of the potential for contamination of country foods:

- A discussion of whether country foods are consumed, or are expected to be consumed, in the potentially affected area (considering First Nations and Inuit people, local residents, hunters, fishers and trappers). Whenever possible, identify what country foods are consumed, which parts of the country foods are consumed if applicable (e.g. whether organs are consumed as well as the meat), and their consumption frequency using surveys of potentially affected people.
- An inventory of all potential contaminants (including naturally-occurring contaminants such as methylmercury) and a determination of whether possible transport pathways of these contaminants into country foods will result from project activities. A contaminant with a pathway relevant to food sources is considered a contaminant of potential concern (COPC).
- A further level of assessment (e.g. HHRA) if there is potential for contamination of country foods as a result of the project activities. An HHRA would consider adequate baseline data and/or modelling of COPCs in country foods prior to any project activities, a predicted impact of project activities on the concentration of contaminants in country foods, a risk characterization of the possible impacts from project activities, and possible risk management strategies, if appropriate.
- A further level of assessment is not necessary if any of the following criteria are met:
 - no COPCs are identified;
 - no feasible, operable transport pathways into country foods exist;
 - no country foods are harvested from the areas; or
 - no human receptors are identified during the project lifespan (i.e. the current project and future projects), or after the project lifespan if there are any residual contaminants.
- A detailed justification, if it is decided that an assessment of the potential for contamination of country foods is not needed, or if certain COPCs are being excluded.
- Information on the mitigation measures that will be taken to minimize any negative impacts on country food quality during all phases of the project. These measures may include the reduction of emissions (e.g. closed-loop processes or emissions scrubbers for industrial projects), the use of consumption advisories when increases of contaminant levels are unavoidable, and educational programs to reduce the affected population's intake of contaminated country foods.
- A description of monitoring plans and/or follow-up programs, if applicable.

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3) Drinking and Recreational Water Quality

It is advisable to consider the following in an assessment of the potential impacts on drinking and recreational water quality:

- The identification of all sources (surface and groundwater) of drinking water, as well as water used for recreational purposes, within the area of influence of the project. Drinking water sources include water intakes for drinking water treatment facilities and/or sources that are consumed directly (i.e. residential wells and on-site wells for workers). Recreational use of natural waters includes any activity with the potential for intentional or accidental immersion in natural waters (wading, swimming, waterskiing, surfing, rowing, canoe touring, fishing, sailing, etc.).
- The identification of potential human receptors, considering those who may be exposed to contaminants via drinking water sources, and/or recreational waters.
- An examination of the potential impacts on the quality of drinking water sources during all phases of the project, as well as the potential for cumulative effects on the quality of these water sources. It is advisable to also consider impacts on physical parameters that can affect drinking water treatment processes. If any changes to water quality are predicted, Health Canada suggests that the potential effects on drinking water quality and human health be discussed.
- An indication of baseline levels of naturally-occurring contaminants (e.g. arsenic) in order to assess impacts on drinking water. The level of naturally-occurring contaminants may already be elevated, and may be further influenced by project activities.
- If a potential impact on a drinking water source is identified, a description of the measures to be employed to inform all potentially affected treatment facilities and/or well owners, and to mitigate risk to human health (measures to eliminate/reduce predicted changes, treatment, use of alternative sources, etc.).
- An examination of the potential impacts on recreational waters during all phases of the project. If any changes to recreational waters are predicted, Health Canada suggests that the potential effects on human health be discussed. If potential impacts on recreational waters are identified, describe the measures to be employed to inform users, and to mitigate any risk to human health (measures to eliminate/reduce predicted changes, restrict access, post signs, educate, etc.).
- Plans for monitoring drinking and recreational water quality, if applicable.

4) Radiological Effects

It is advisable to consider the following in an assessment of potential radiological effects:

- Provide quantitative information on baseline and predicted radiological parameters in air, water, soil, dust and foods, and discuss the implications of these parameters.
- Discuss the potential impacts of predicted radiation doses on both nuclear energy workers and the public during all phases of the project.
- Make every effort to keep exposure to radiation As Low As Reasonably Achievable (conforming to the ALARA principle) rather than simply meeting the requirements of the radiation protection regulations of the *Nuclear Safety and Control Act* (Canadian Nuclear Safety Commission 2004).

5) Electric and Magnetic Fields (EMF) Effects

It is advisable to consider the following in an assessment of potential EMF effects:

- The identification of all potential sources of EMF and potential human receptors in the project area.

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- A discussion on the current state of scientific knowledge with respect to possible health effects from EMF exposure and a review of current exposure guidelines and/or position statements from health-related organizations (e.g. World Health Organization 2007).
- Background EMF levels at selected locations along the proposed site prior to construction, and their corresponding estimated levels after construction.
- A description of the mitigation measures that will be taken to reduce public exposure to EMF and to mitigate potential public concerns over the possible human health effects of project-related EMF.

6) Noise Effects

Health Canada does not have noise guidelines or enforceable noise thresholds or standards. Responsible authorities (and/or provincial/territorial authorities) are encouraged to consult with provincial and municipal authorities to determine which standards or regulations exist for the location of the proposed project, as differences may exist in their respective approaches to limiting noise impacts.

Health Canada's approach to noise assessment is to consider a variety of internationally recognized standards for acoustics (i.e. United States Environmental Protection Agency (U.S. EPA 1974), CAN/CSA ISO standards). Health Canada considers the following noise-induced endpoints as health effects: noise-induced hearing loss, sleep disturbance, interference with speech comprehension, complaints, and change in percent highly annoyed (%HA). The approach advised by Health Canada to noise assessment is based on the best possible characterization of baseline and project-related noise and its impact on potential noise-sensitive receptors. To obtain the highest quality data, Health Canada advises that acoustical assessments be completed by professional and properly trained consultants using methods that are recognized as the industry standard.

It is advisable that an assessment of noise exposure on human receptors located near the project site considers the following:

- The identification of all potential noise-sensitive receptors and their locations relative to the project area, and the identification of areas in which receptors could be considered to have a reasonable expectation of "peace and quiet" (i.e. "quiet rural areas"). The identification of sensitive receptors may include residences, daycares, school, hospitals, places of worship, nursing homes, and First Nations and Inuit communities.
- A delineation of the distance of the project to potential receptors using maps that indicate noise levels at various distances from the project site and identify all affected receptors. If any potential receptors are excluded from the assessment, provide a justification.
- The identification/assessment of baseline sound levels (measured or estimated) for both daytime (Ld) and nighttime (Ln) at the receptor locations.
- The identification of all potential noise sources during construction, operation and decommissioning (e.g. blasting, traffic, heavy equipment or transformers), and the identification of any tonal (e.g. sirens), low-frequency (e.g. wind turbines), impulsive (e.g. quarry or mining explosions), and highly impulsive (e.g. hammering, pile driving or pavement breaking) types of noise.
- A description of the methods (i.e. measured or estimated) used to obtain the baseline and predicted noise levels, including detailed information on how the noise assessment was conducted.
- A comparison of baseline noise levels with predicted noise levels at sensitive receptor locations during construction, operation, and/or decommissioning (during daytime and nighttime, and after mitigation, if warranted).

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- The expected duration of noise due to construction activities (and, if applicable, operation and/or decommissioning activities). Note that Health Canada uses the Alberta Energy and Utilities Board Noise Control Directive 038 (2007) for guidance on whether construction noise should be considered short-term with regard to the prediction of complaint levels.
 - If construction noise lasts for less than two months at receptors, it may be considered temporary, and community consultation is advised.
 - For construction noise at receptors with durations of less than one year (i.e. short-term), Health Canada advises that mitigation be proposed if the resulting levels are predicted to result in widespread complaints or a stronger community reaction, based on the U.S. EPA method (U.S. EPA 1974, Michaud et al. 2008).
 - For construction noise at receptors with durations of more than one year (i.e. long-term), for operational noise, and where noise levels are in the range of 45-75 dB, Health Canada advises that health impact endpoints be evaluated on the change in the percentage of the population (at a specific receptor location) who become highly annoyed (%HA). Health Canada suggests that mitigation be proposed if the predicted change in %HA at a specific receptor is greater than 6.5% between project and baseline noise environments, or when the baseline-plus-project-related noise is in excess of 75 dB.
- An evaluation of the severity of predicted changes in noise levels and how they may affect human health.
- When health effects due to noise are predicted, Health Canada advises the identification of mitigation measures to limit noise, which typically include community consultation programs. In some situations where a specific type of mitigation is not technically or economically feasible, community consultation has achieved success in limiting the number of noise-related complaints.
- Noise management and noise monitoring plans, including complaint resolution, if applicable.

7) Human Health Risk Assessment (HHRA) and Risk Management

For a project to pose a potential risk to human health, three criteria must be present: the potential for emissions or the release of contaminants of concern (COPC), potential human receptor(s), and existing pathway(s) for human exposure to COPCs.

It is advisable that an HHRA include the following:

- A description of the HHRA methodology used, preferably one based on standard HHRA practice. If an alternate HHRA methodology is used, clearly describe the rationale for its use.
- A description of the purpose, objectives, scope and rationale for the HHRA.
- A description of temporal and spatial boundaries.
- An inventory of all COPCs including their use, quantity, fate, potential for bioaccumulation and transport. Health Canada suggests that any COPCs screened out be accompanied by a rationale as to why they would not be considered a potential concern for human health.
- A description of all potential exposure pathways and potential human receptors (including sensitive receptors) included in a conceptual model. It is advised that exposure pathways and human receptors screened out be accompanied by a rationale as to why they would not be a potential concern.
- A rationale for all assumptions, default values used and related uncertainties at all stages of the HHRA, and applicable references.
- A description of the exposure estimation, equations and calculations, supported by a worked example for one carcinogen and one non-carcinogen, and appropriate to the project conditions, to facilitate validation of the results of the HHRA.

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- A description of the potential acute and chronic effects of COPCs (e.g. respiratory, organ, reproductive, teratogenic, mutagenic and carcinogenic) and mode of action (i.e. threshold and non-threshold) of COPCs.
- A rationale for the selection of toxicological reference values for COPCs.
- A comparison of the exposure estimate to a toxicological reference value and a determination of the potential risk to human health.
- A description of the reference risk levels used to assess human health risks and their source (e.g. incremental lifetime cancer risk <1 in 100,000, hazard quotient <0.2 or <1.0).
- In cases where two or more COPCs may act in an additive manner upon receptors, consideration of the possible combined effects when characterizing health risks.
- A description of mitigation and risk management options in cases where potential exposure exceeds toxicological reference values.
- A discussion of uncertainties in the exposure and risk estimates. Health Canada suggests addressing issues such as: the quality and quantity of data; the use of maximum COPC concentrations; and factors, assumptions, and models that may lead to an overestimation or underestimation of exposures and risks.

8) Federal Air, Water, and Soil Quality Guidelines/Standards Used in HHRAs

When an environmental assessment includes a comparison of air, water, food, and soil quality guidelines/standards to COPC concentrations, it is advisable to include the following information:

- A summary table clearly outlining the comparison of guidelines/standards to baseline or predicted data and highlighting any exceedances of guidelines/standards.
- A rationale for the selection of guidelines/standards and the document reference.
- A discussion of how the guidelines and standards are relevant to human health (i.e. health-based) considering the type of COPCs, project receptors, spatial and temporal boundaries, land use conditions, etc.

9) Toxicology (multimedia - air, water, soil)

It is advisable that any discussion on the toxicology of COPCs (see section 7 on HHRAs) includes the following information:

- A summary of the COPCs' potential acute and chronic effects (e.g. respiratory, organ, reproductive, teratogenic, mutagenic or carcinogenic) and mode of action (i.e. threshold vs. non-threshold).
- A rationale for the selection of toxicological reference values for the COPCs used in the HHRA.

10) First Nations and Inuit Health

It is advisable that an assessment of First Nations and/or Inuit health consider the following:

- The location of First Nations and Inuit people in relation to the project.
- The size of the population(s) potentially affected.
- The presence of drinking water intakes and recreational water use (see section 3).
- Country food harvesting, the consumption of country foods and intake rates (see section 2).
- The incorporation of traditional and local knowledge for exposure assumptions (i.e. the location of traditional resource use).

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Additional Information:

Workers' Health

Only in certain limited situations does Health Canada have the expertise to comment on occupational health and safety aspects of projects. Health Canada has expertise related to nuclear workers as covered by the *Nuclear Safety and Control Act*.

It is advisable to consider the following in an assessment of the potential radiological effects of the project on nuclear workers:

- The identification of the radiation doses to the workers associated with the various duties in the project during applicable project stages (construction, operation, refurbishment/modification and decommissioning).
- The identification of the type of radiation and the duration of exposure, taking into consideration the different time frames specified in the *Radiation Protection Regulations* of the *Nuclear Safety and Control Act*.

For certain projects, workers may be housed onsite or nearby in workers' camps, and may be considered temporary residents. Depending upon the nature of the project, the responsible authority (and/or the provincial/territorial authority) may want to consider an assessment of potential effects on human health to off-duty workers residing onsite or in nearby workers camps.

Socio-Economic Effects

Health Canada does not currently have the expertise to comment on the human-health-related socio-economic impacts of projects. Health Canada suggests that the responsible authority (and/or the provincial/territorial authorities) seek this expertise from appropriate agencies.

For More Information

The information presented in this document is current as of the publishing date. It is anticipated that revisions to this document will be necessary on occasion to reflect new information (resulting from research, standards, guidelines, or the development of new technologies). The most recent version may be obtained from Health Canada.

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