Bipole III Transmission Line Project-

Mammals

Manitoba Hydro

wildlife RESOURCE CONSULTING SERVICES MB INC

Joro Consultants

Outline

- Mammal Valued Environmental Component (VEC) selection
- Overview of VEC mammal species
- Predicted effects of Project
- Mammals evaluation of alternative routes in the selection of the FPR
- Evaluation of FPR effects on mammals
- Summary of results

Mammal VEC Species in Bipole III Project Study Area

- Importance to people – species important for hunting and trapping activities, as well as culturally significant species;
- Regulatory requirements – federal and provincial legislation regulate hunting activities and protect critical habitats for rare and endangered species;
- Keystone species – a species that is critical in maintaining the structure of an ecological community and whose impact on a community is larger than would be expected based on its relative abundance
- Umbrella species – a species selected for making conservation-related decisions that indirectly protects many other species within the ecological community);
- Indicator species – a species that defines a trait or characteristic of the environment

Mammal VEC Species in Bipole III Project Study Area

- Caribou
- Moose
- American marten
- Beaver
- Elk
- Wolverine – ‘special concern’ under SARA
- Grey wolf – Linkage Species

Moose and Caribou

- Moose and Caribou (Wednesday Presentation)
  - Habitat requirements of moose and caribou meet the needs of the majority of boreal forest mammal species
  - Species represented within moose and caribou habitats include but not limited to (hare, mink, otter, lynx, fisher, small mammals, etc.)

American Marten

Trail camera photo of an American marten

American Marten

- Member of the weasel family
- Mature coniferous forest – forages in open areas
- Feeds mainly on the ground (voles and mice)
- Breeds in Summer, kits born in early spring

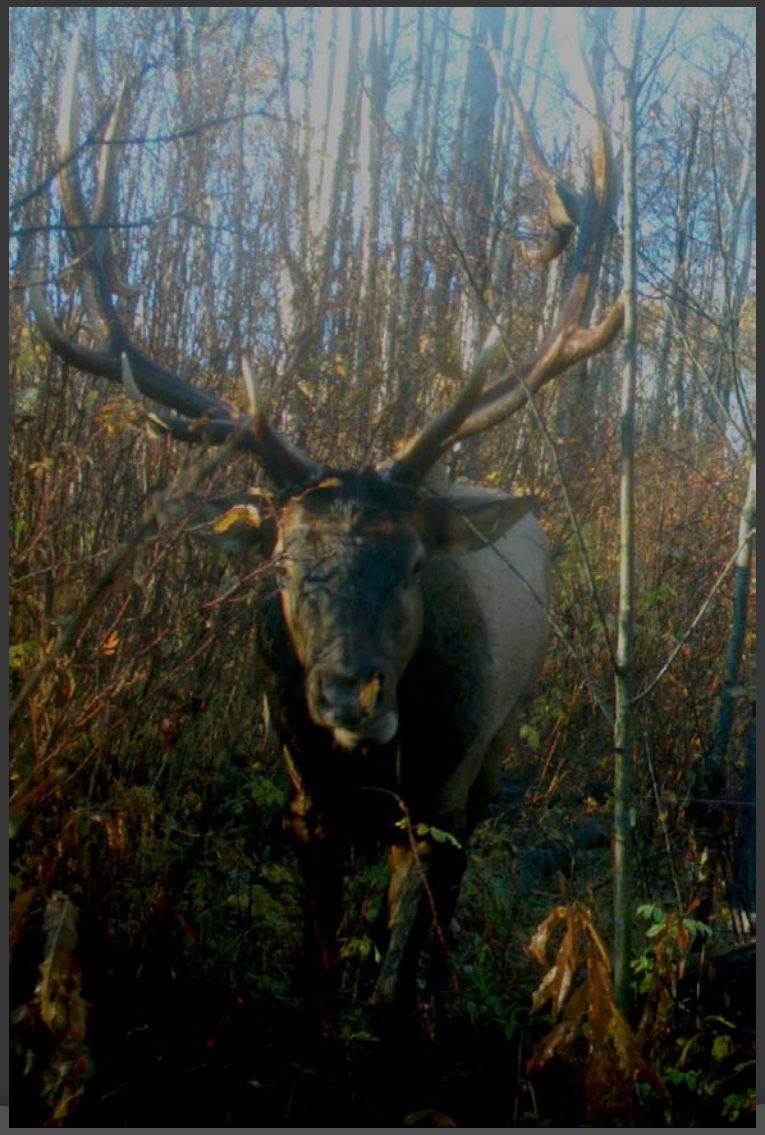
Beaver

Photo credit: Michael S. Quinton, National Geographic

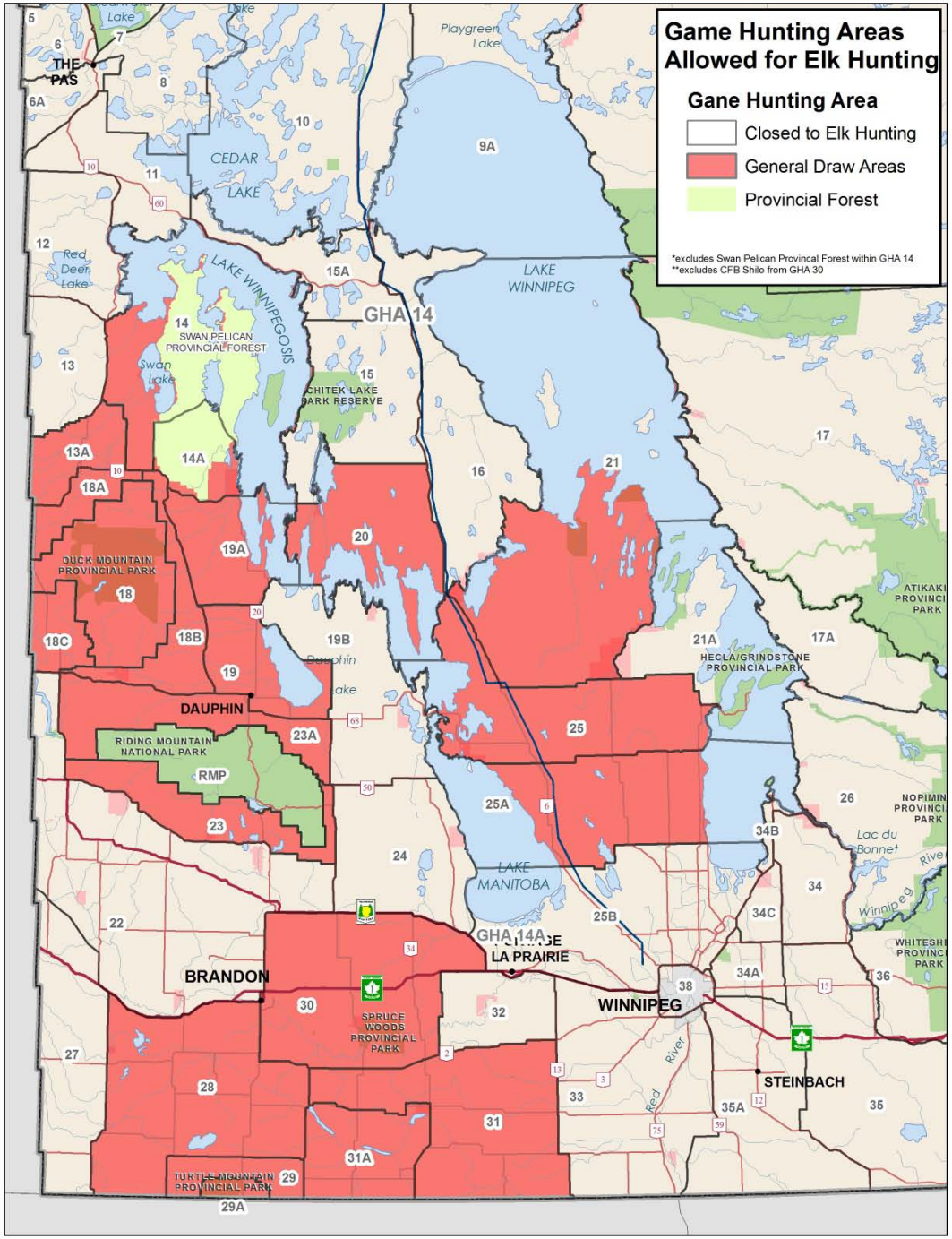
Beaver

- Breed in winter, kits born in spring
- Manipulates habitat to the benefit of other species (ecological effects)
- Old beaver floods valuable habitat for other species

Elk



- Grazer / browser
- Young deciduous habitats
- High resiliency – productive ungulate
- Depredation in agricultural areas


Game Hunting Areas
Allowed for Elk Hunting
Gane Hunting Area
Closed to Elk Hunting
General Draw Areas
Provincial Forest
*excludes Swan Pelican Provincal Forest within GHA 14
**excludes CFB Shilo from GHA 30
THE PAS
CEDAR LAKE
Playgreen Lake
LAKE WINNIPEG
LAKE WINNIPEGOSIS
Red Deer Lake
Swan Lake
SWAN PELICAN PROVINCIAL FOREST
GHA 14
CHITEK LAKE PARK RESERVE
DUCK MOUNTAIN PROVINCIAL PARK
DAUPHIN
Dauphin Lake
RIDING MOUNTAIN NATIONAL PARK
RMP
LAKE MANITOBA
Lac du Bonnet
Winnipeg River
BRANDON
SPRUCE WOODS PROVINCIAL PARK
LA PRAIRIE
WINNIPEG
STEINBACH
Red River
TURTLE MOUNTAIN PROVINCIAL PARK
HECLA/GRINDSTONE PROVINCIAL PARK
ATIKAKI PROVINCIAL PARK
NOPIMING PROVINCIAL PARK
WHITESHELL PROVINCIAL PARK
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Elk

Location	Population	GHA
Riding Mountain National Park (3000 km^2)	3500	23, 23a (surrounding park)
Duck Mountain Provincial Forest (3750 km^2)	2000	18, 18A, 18B, 18C
Porcupine Hills Area	300	13, 13a
Red Deer Lake	100	12
Spruce Woods	400	30
South Interlake	800	21, 25, 25a, 25b
Swan River Valley	250	13, 13a

Small satellite herds - Pine River-Ethelbert, Kettle Hills, Piney, Oak-Plum Lakes, Souris River Bend WMA, Rock Lake, and Turtle Mountain areas.

New satellite herds recently appeared in the Kettle Hills and Piney areas.

Approximately 7350 elk in Manitoba (Manitoba Conservation 2012)

Wolverine

Trail camera photo

Wolverine

- Member of the weasel family (Skunk Bear!)
- Carnivores, but mainly scavengers
- Large territories and travel great distances
- Breed in Summer and give birth from from late February to early March in deep snow.
- Both natal and maternal dens are used (females will readily relocate kits)
- Avoid disturbed areas
- Actively trapped

Grey Wolf – Linkage Species

- Potential effect for increased wolf movement
  - Avoid fragmenting intact habitat
  - Follow existing disturbances and linear development

Summary of Potential Effects Assessed

- Mortality – population reduction
  - Over harvest – hunting and trapping
  - Predation – wolves
- Habitat alteration
  - Direct loss of habitat
  - Fragmentation and functional habitat loss
  - Loss of unique habitat (dens, mineral licks)
- Sensory Disturbance
  - displacement

Evaluation of Alternate Routes

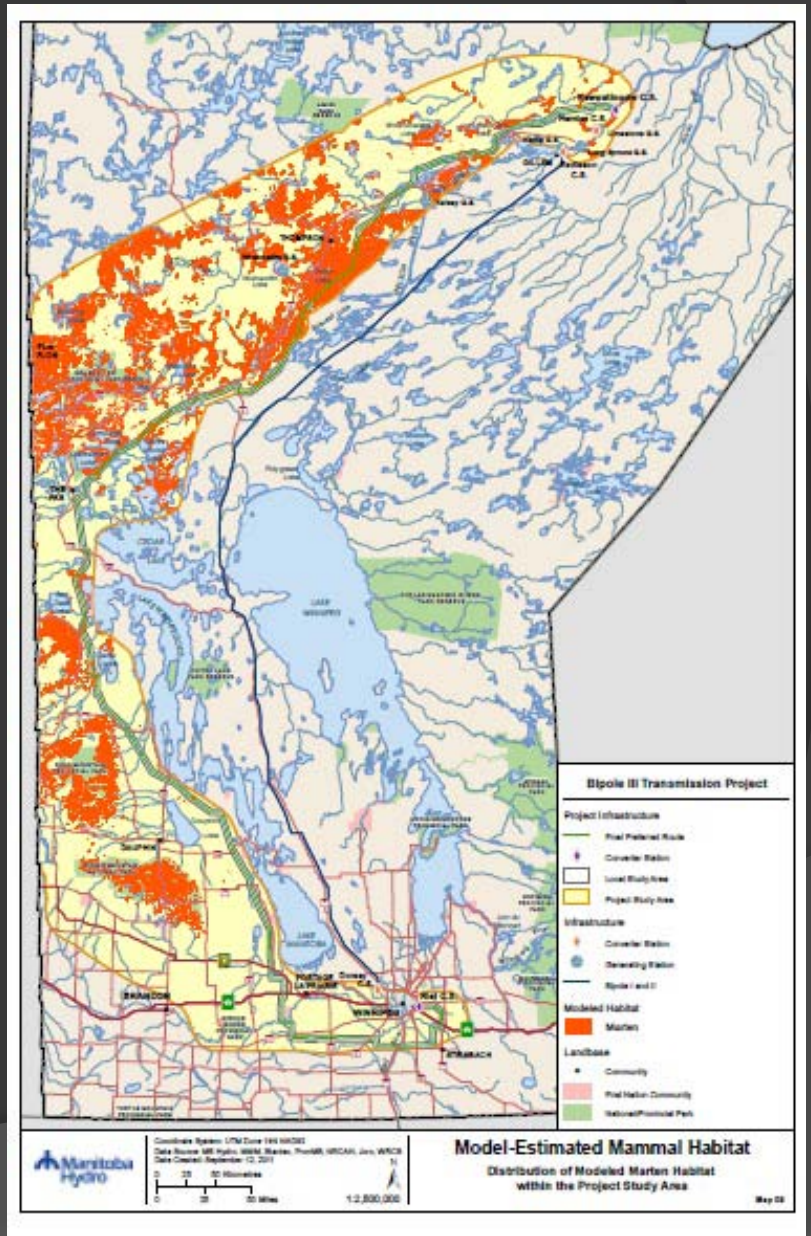
- Route selection and potential effects of FPR on VEC species was conducted using the following methods:
  - Literature and field data
  - Modelling
  - Evaluation of available habitat within ecoregions overlapping Project components
  - Historical data, government documents
  - Fur production records
  - Results of Traplines and Transmission Lines Pilot Project

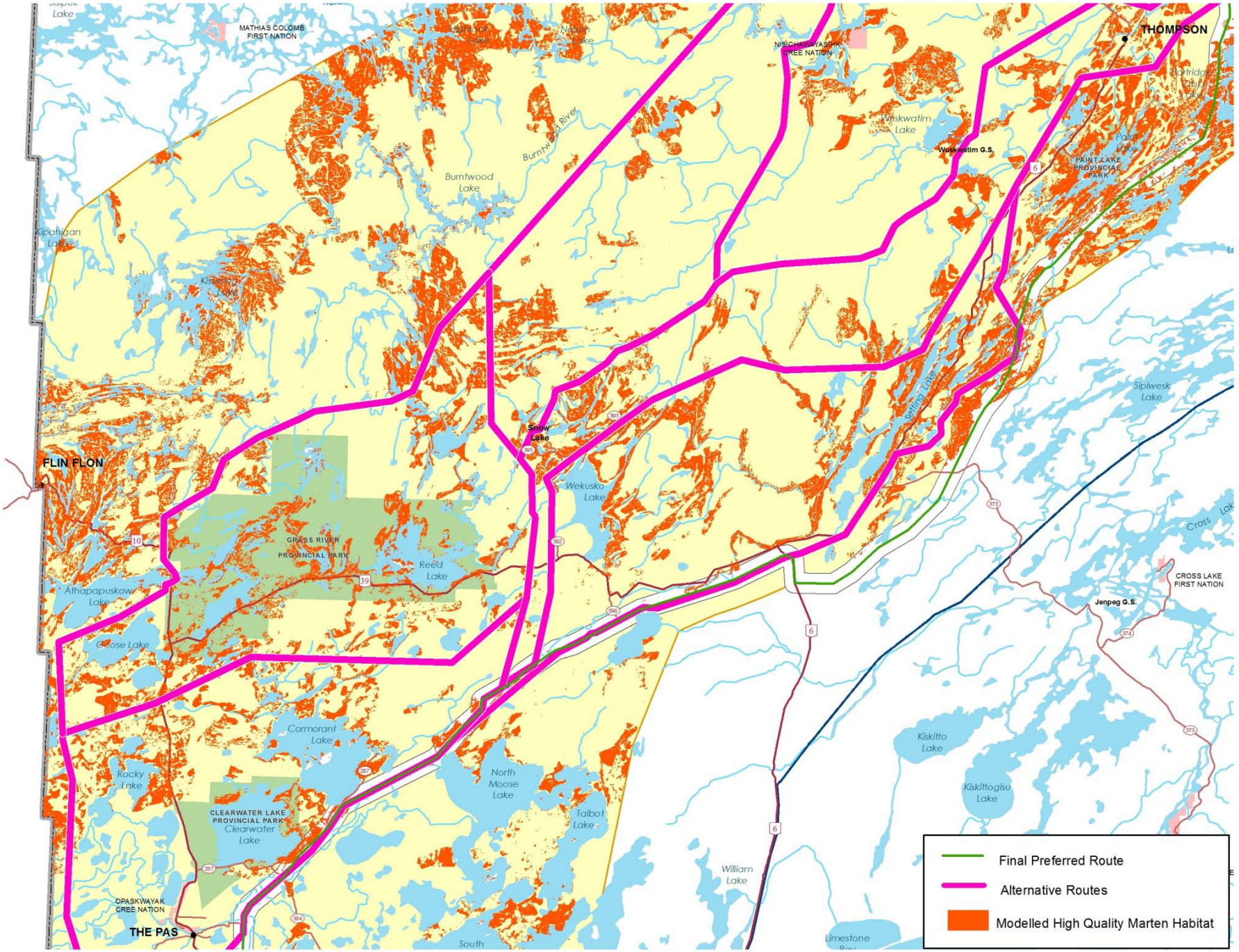
Evaluation of Alternate Routes

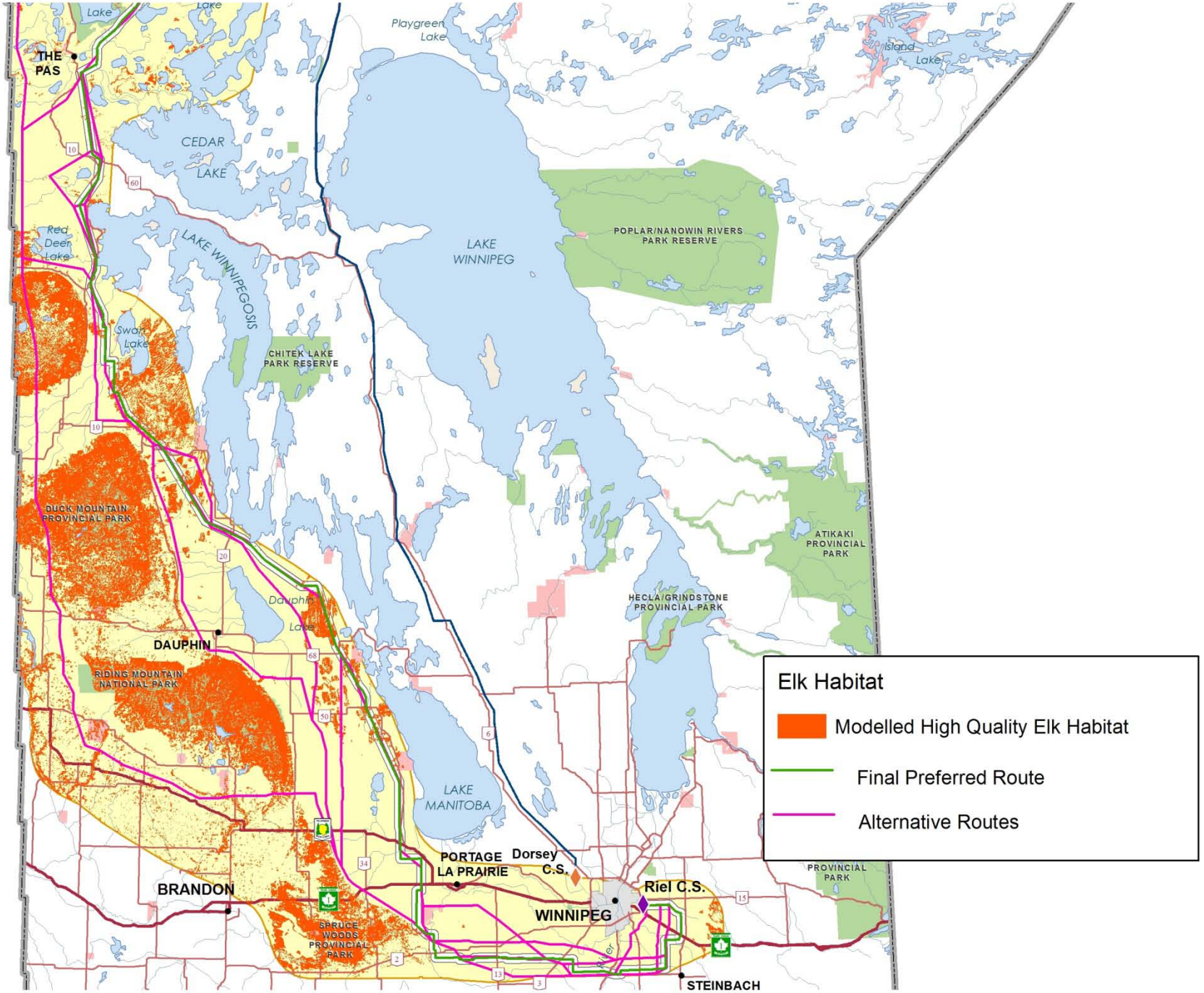
- Route selection for VEC mammals favoured avoidance of intact – non fragmented habitats (higher ranking)
- Amount of modeled habitat within each segment
- Known areas of fur harvest (consideration to areas not being trapped)
- General avoidance of known elk areas (MCWS)

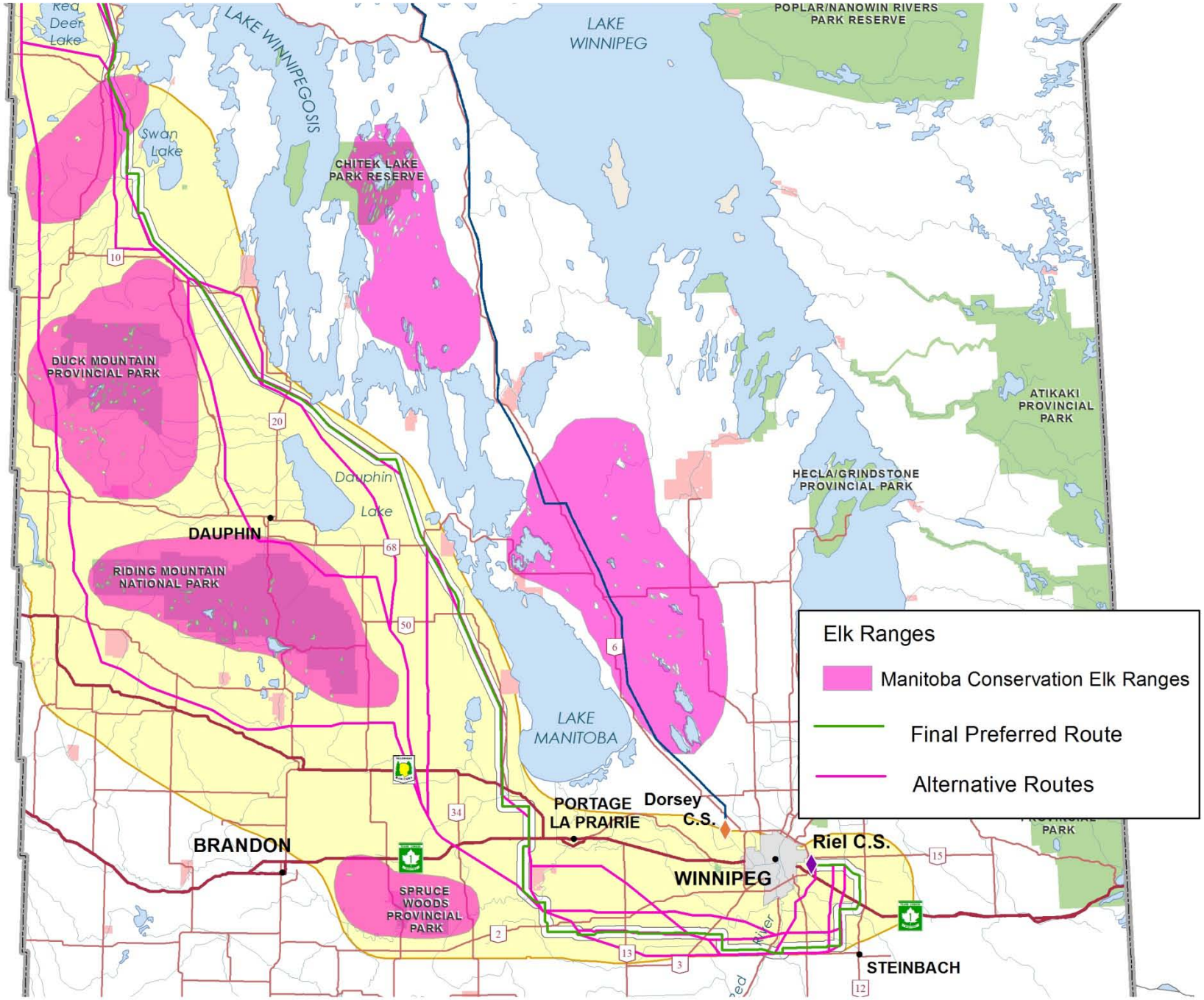
Evaluation of Alternate Routes

- Modeling of VEC habitat
  - Identification of high-quality habitat through modelling was undertaken using the LCCEB for VEC mammals species




MATHIAS COLOMB FIRST NATION
NISICHAWAYASIHK CREE NATION
THOMPSON
Waskwatim Lake
Waskwatim G.S.
PAINT LAKE PROVINCIAL PARK
Burntwood River
Burntwood Lake
Kipahigan Lake
FLIN FLON
Snow Lake
Wekusko Lake
Sipiwesk Lake
GRASS RIVER PROVINCIAL PARK
Reed Lake
Athapapuskow Lake
Goose Lake
CROSS LAKE FIRST NATION
Jenpeg G.S.
Cormorant Lake
Rocky Lake
North Moose Lake
Talbot Lake
CLEARWATER LAKE PROVINCIAL PARK
Clearwater Lake
Kiskitto Lake
Kiskittogisu Lake
William Lake
OPASKWAYAK CREE NATION
THE PAS
Final Preferred Route
Alternative Routes
Modelled High Quality Marten Habitat


THE PAS
Playgreen Lake
Island Lake
CEDAR LAKE
Red Deer Lake
LAKE WINNIPEGOSIS
LAKE WINNIPEG
POPLAR/NANOWIN RIVERS PARK RESERVE
Swan Lake
CHITEK LAKE PARK RESERVE
DUCK MOUNTAIN PROVINCIAL PARK
ATIKAKI PROVINCIAL PARK
HECLA/GRINDSTONE PROVINCIAL PARK
Dauphin Lake
DAUPHIN
RIDING MOUNTAIN NATIONAL PARK
LAKE MANITOBA
PORTAGE LA PRAIRIE
Dorsey C.S.
Riel C.S.
BRANDON
WINNIPEG
SPRUCE WOODS PROVINCIAL PARK
STEINBACH
Elk Habitat
Modelled High Quality Elk Habitat
Final Preferred Route
Alternative Routes


Red Deer Lake
LAKE WINNIPEGOSIS
LAKE WINNIPEG
POPLAR/NANOWIN RIVERS PARK RESERVE
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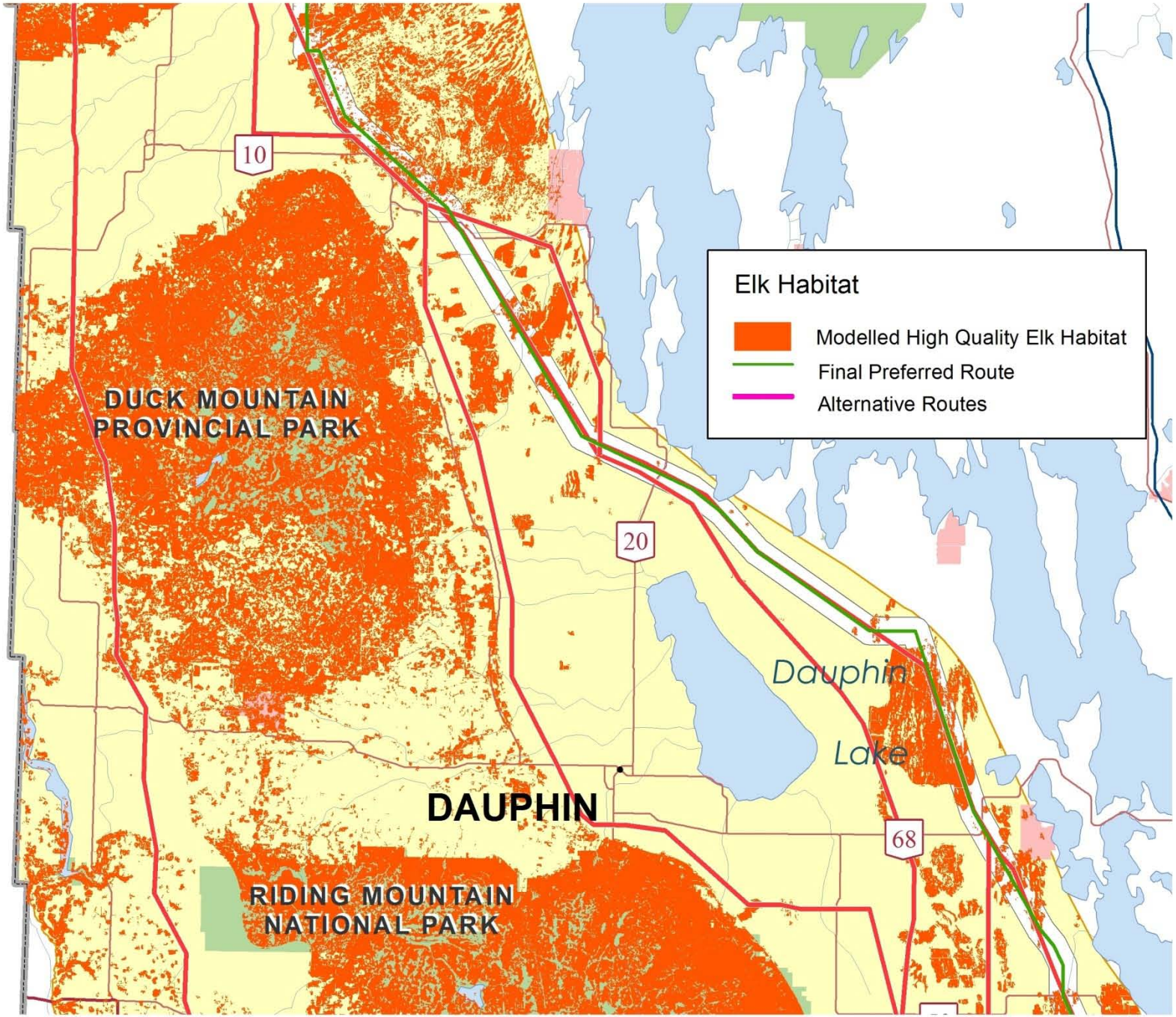
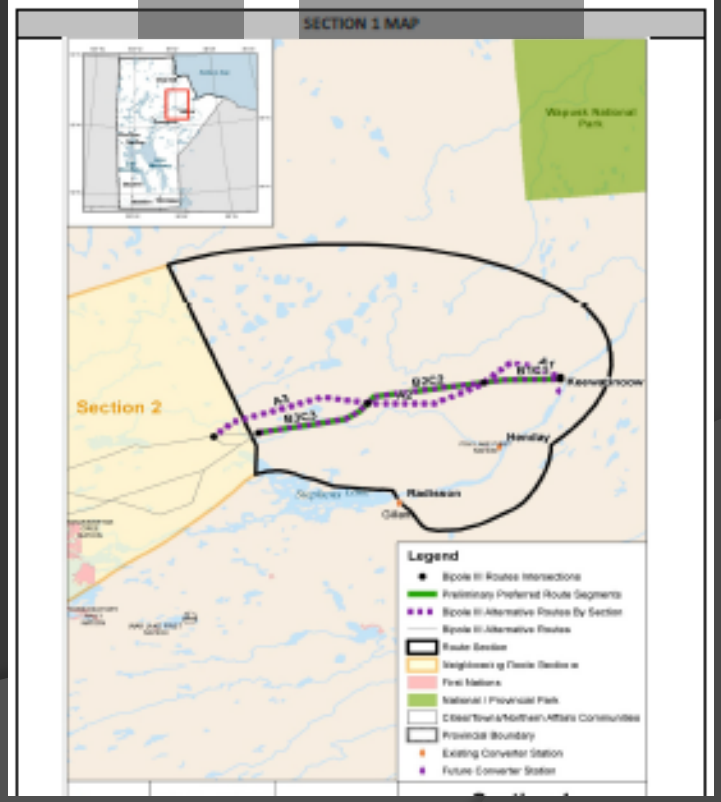
BRANDON
WINNIPEG
SPRUCE WOODS PROVINCIAL PARK
STEINBACH
Elk Ranges
Manitoba Conservation Elk Ranges
Final Preferred Route
Alternative Routes


Elk Habitat
Modelled High Quality Elk Habitat
Final Preferred Route
Alternative Routes
DUCK MOUNTAIN PROVINCIAL PARK
RIDING MOUNTAIN NATIONAL PARK
DAUPHIN
Dauphin Lake
10
20
68

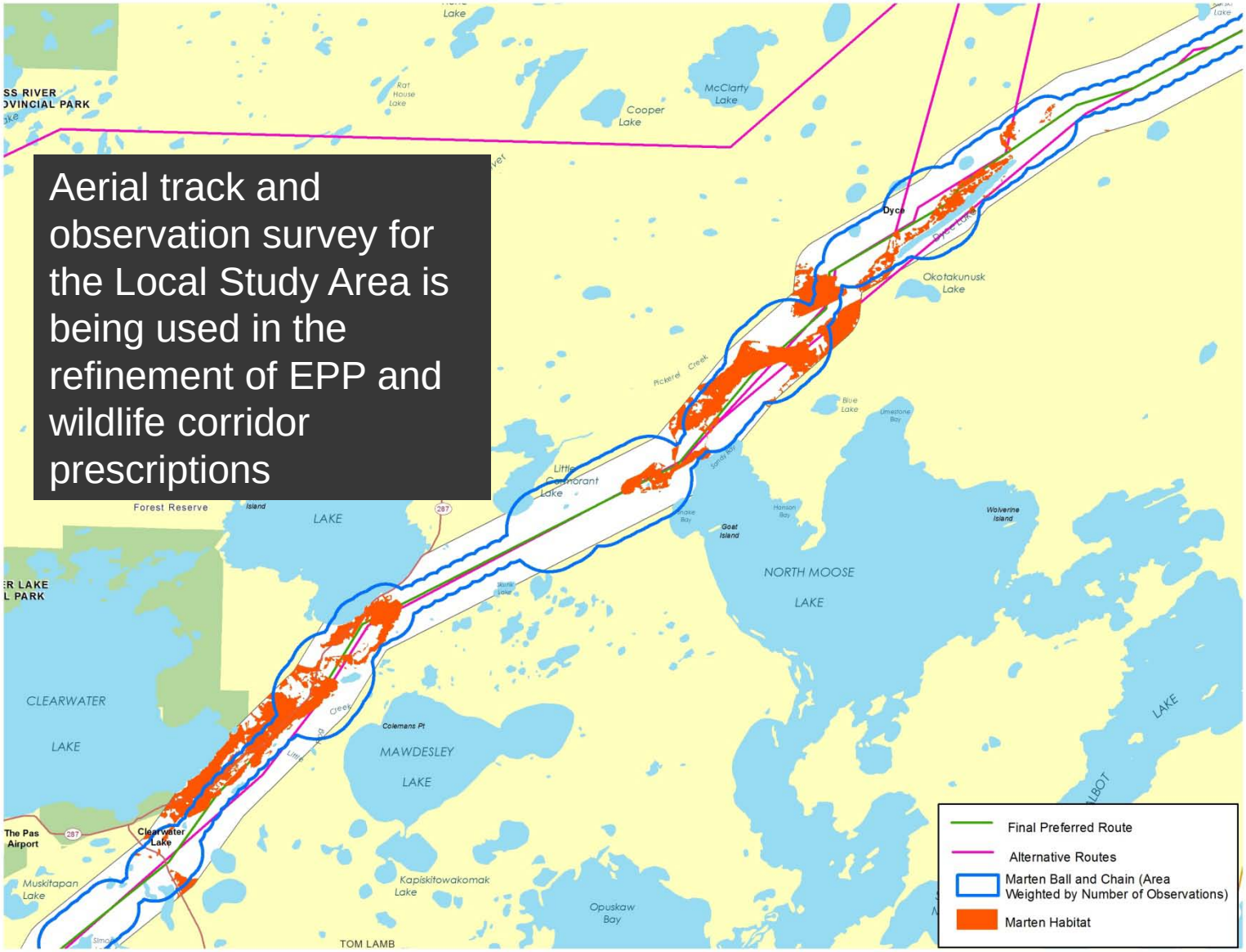
Evaluation of Alternate Routes

- CRITERIA
- High quality habitat – VEC's
- Reduce fragmentation
- Follow existing disturbance
- Avoid known concentration areas

SECTION	SEGMENT	Biophysical										Socio -		
		1 Vegetation	2 Forestry	3 Birds	4 Mammals	5 Caribou	6 Core Communities	7 Fragmentation-Wildlife	8 Soils/Terrain (Local)	9 Aquatics	10 Amphibians & Reptiles	11 Population Density	12 Culture - Heritage	
1	A1	L	L	L	M	M	L	H	L	M	L	L	L	
1	A2	M	L	L	M	M	VH	H	L	M	L	L	L	
1	A3	M	L	L	M	M	VH	H	L	M	L	L	L	
1	B1C1	L	L	L	M	M	L	H	L	M	L	L	L	
1	B2C2	M	L	L	M	M	VH	H	L	H	L	L	L	
1	B3C3	M	L	L	M	M	L	H	M	M	L	L	L	

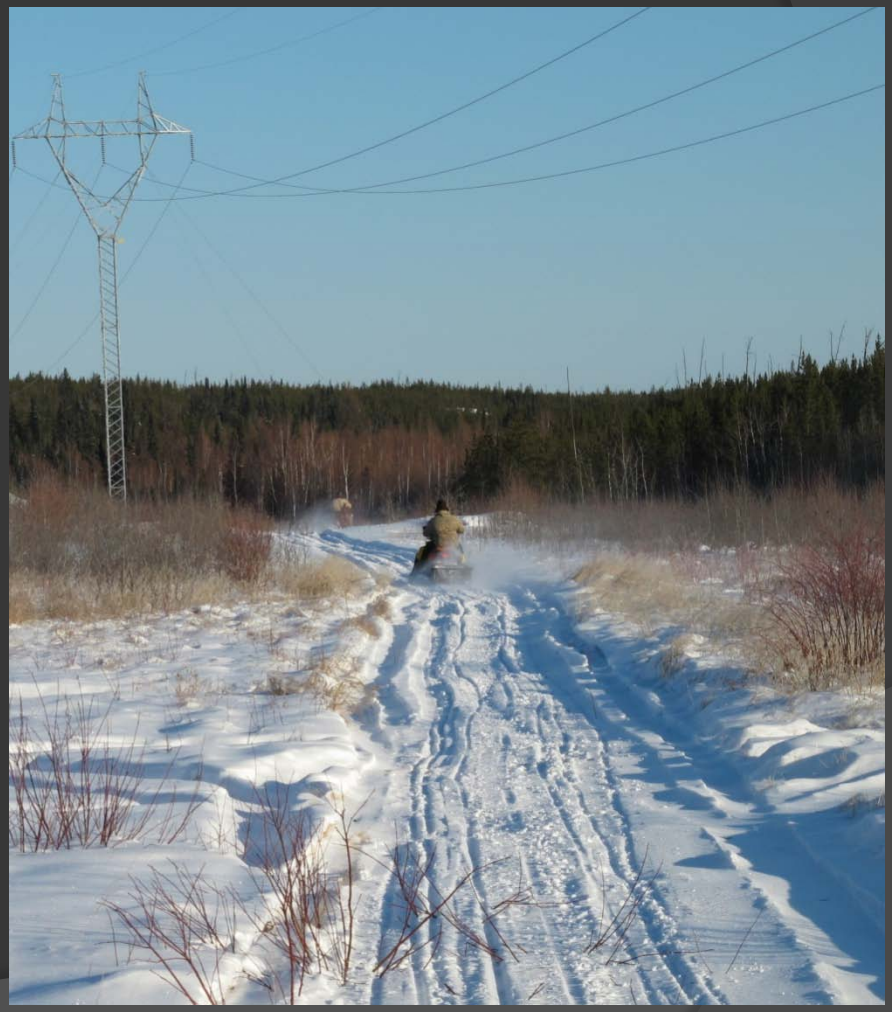


Evaluation of the FPR



Traplines and Transmission Lines Pilot Project

- Objective was to work with trappers to assess the effects of transmission line construction and operation on furbearers and trapper success
- Wuskwatim Transmission Line Project



Methods

- Over two years, monitoring was conducted to investigate the effects of transmission line construction and operation on furbearer movement

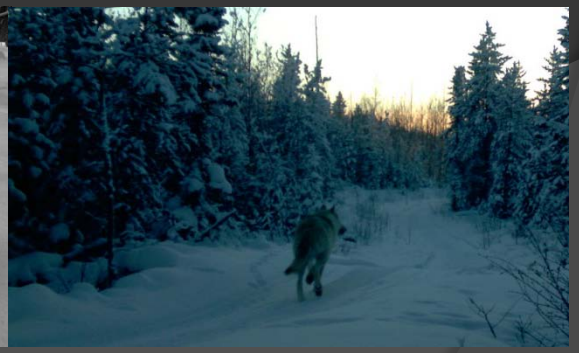
- Activities in association with pilot project:
  - Small mammal monitoring;
  - Furbearer movement via trapping;
  - Furbearer aerial surveys;
  - Trail camera studies; and
  - Trapper involvement and trials (near and away from ROW).

Snow Lake trapper marking GPS waypoint at marten set

Results

- Preliminary results of trapping trials adjacent to and away from the Wuskwatim Transmission Lines indicate **no residual effect** of furbearer avoidance on trapper success after construction
- Trappers observed that furbearers avoided areas with consistent amounts of noise and disturbance during construction and returned to the area once the disturbance ended





Evaluation of the FPR

American Marten

- Overharvest of furbearers through increased access is not expected. Trappers manage their catch and harvest is regulated by MCWS
- Sensory disturbance is expected during construction with animals returning afterwards
- Effects of fragmentation on marten and other furbearers is not expected
- Re-growth of ROW following construction provides natural structure for animal movement

Evaluation of the FPR

Beaver

- Overharvest of beaver is not anticipated
- No project effects on beaver populations
- Beaver habitat = riparian areas

Evaluation of the FPR

Elk

- Main elk areas are away from the FPR and associated with the Duck Mountains and Porcupine Hills
- Elk (if present) are anticipated to avoid areas during construction, but return once disturbance has ended
- Habitat in ROW will favour elk

Evaluation of the FPR

Elk

- Elk have large home ranges and the FPR constitutes a small portion of habitat for all life stages
- Potential for overharvest is not a concern due to location of FPR (avoids known winter concentration and major elk areas)
  - Follows existing linear development and disturbed areas

Evaluation of the FPR

Wolverine

- Wolverine have very large home ranges and occur at very low densities
- The majority of wolverine observations were not located within the Local Study Area.
  - Avoided routes near Snow Lake and areas west of Setting Lake (Wabowden region)
- Wolverine do not den near disturbances. The majority of the FPR follows existing linear development and disturbed areas.

Grey Wolf

- Predators, including wolves and coyotes were observed in all areas studied (ROW's and intact forest).
- Wolf collaring (in caribou areas) provided insight into wolf use of transmission line ROW's

ATK - Examples

- Information from interviews and workshops outlined that marten were actively found and trapped in areas which overlap with high-quality marten habitat model results
- Included Duck Mountain Provincial Park, areas between The Pas and Wabowden, and select areas around Split Lake.

Proposed Mitigation

- Majority of effects on VEC's mitigated through routing;
- Clearing of the ROW during winter months to lessen disturbance during birthing and rearing of most mammal species
- Mitigation measures for the protection and management of riparian and aquatic habitats will reduce effects on these habitats
- Provincial harvest management policies and strategies will regulate trapping and hunting activities;
- Manitoba Hydro to manage access during construction and work with local resource users (trappers)

Summary of Potential Effects Assessed

- Mortality – population reduction
  - Over harvest – hunting and trapping
  - Predation – wolves

Environmental Indicator	Measurable parameter	Environmental Effect	Residual Environmental Effect
Habitat Regional and local population status	**Hunting Statistics Population Status**	**Overharvest as a result of increased access.**	**Populations maintained with the natural range of variability.**

Summary of Potential Effects Assessed

- Habitat alteration
  - Direct loss of habitat
  - Fragmentation and functional habitat loss
  - Loss of unique habitat (dens, mineral licks)

Environmental Indicator	Measurable parameter	Environmental Effect	Residual Environmental Effect
Habitat availability	**Modeled habitat**	**Habitat loss and fragmentation (Minimal)**	**Populations maintained with the natural range of variability.**

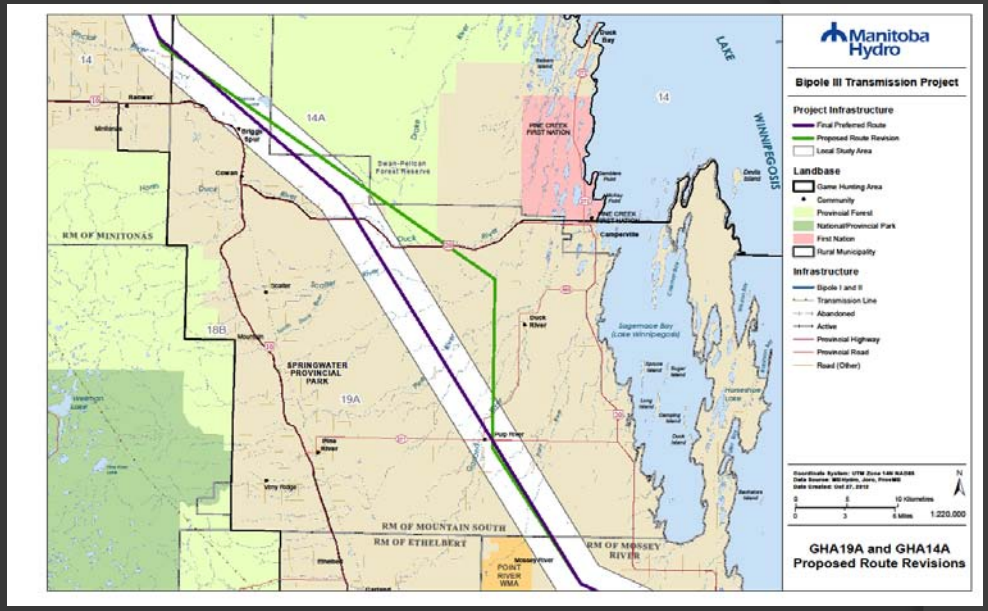
Summary of Potential Effects Assessed

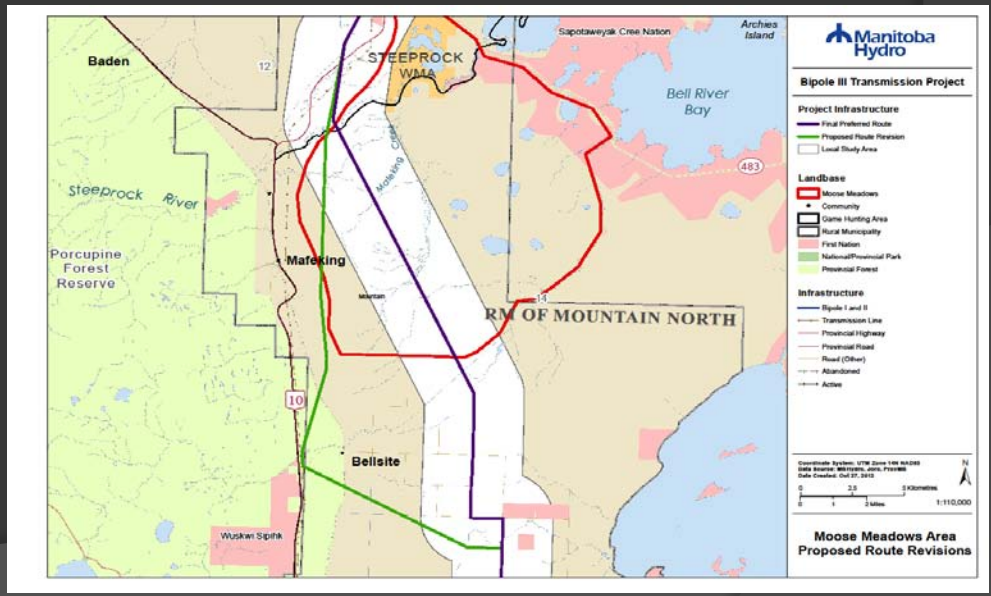
- Sensory Disturbance

Environmental Indicator	Measurable parameter	Environmental Effect	Residual Environmental Effect
Regional and local population status	**Regional and Local populations** **Animal abundance**	**Short term avoidance, displacement**	**Populations maintained with the natural range of variability.**

Assessment of Revised Segments

- Wabowden
- Moose Meadows
- GHA 14 & 19
  - Evaluations conducted for all VEC mammal species
  - Conclusions in EIS remain consistent





Conclusions

- The area of the ROW is a small part of the annual life cycle requirement for mammal VEC's
- Avoidance criteria used in the selection of FPR reduced effects on mammal VEC's

Conclusions Continued

- Sensory disturbance is expected during construction
- Furbearers and other mammals will return
- Wildlife will forage near and on ROW's and will not be a barrier
- Increased predation by grey wolf is not expected
- Increased mortality due to excessive harvesting (trapping) not expected
- Increased mortality to elk not expected (avoidance)

Conclusions Continued

- Conclusions of EIS on Mammal VEC's indicate no significant residual environmental effects with successful mitigation and monitoring.

Thank You