



Too Many Holes in BiPole 3 Plan

By: Colin Craig, Canadian Taxpayers Federation
Jim Collinson, former UNESCO World Heritage Committee President
John Roschuk, Electrical Engineering Specialist
Jim Graham, P.Eng, Professor Emeritus, University of Manitoba

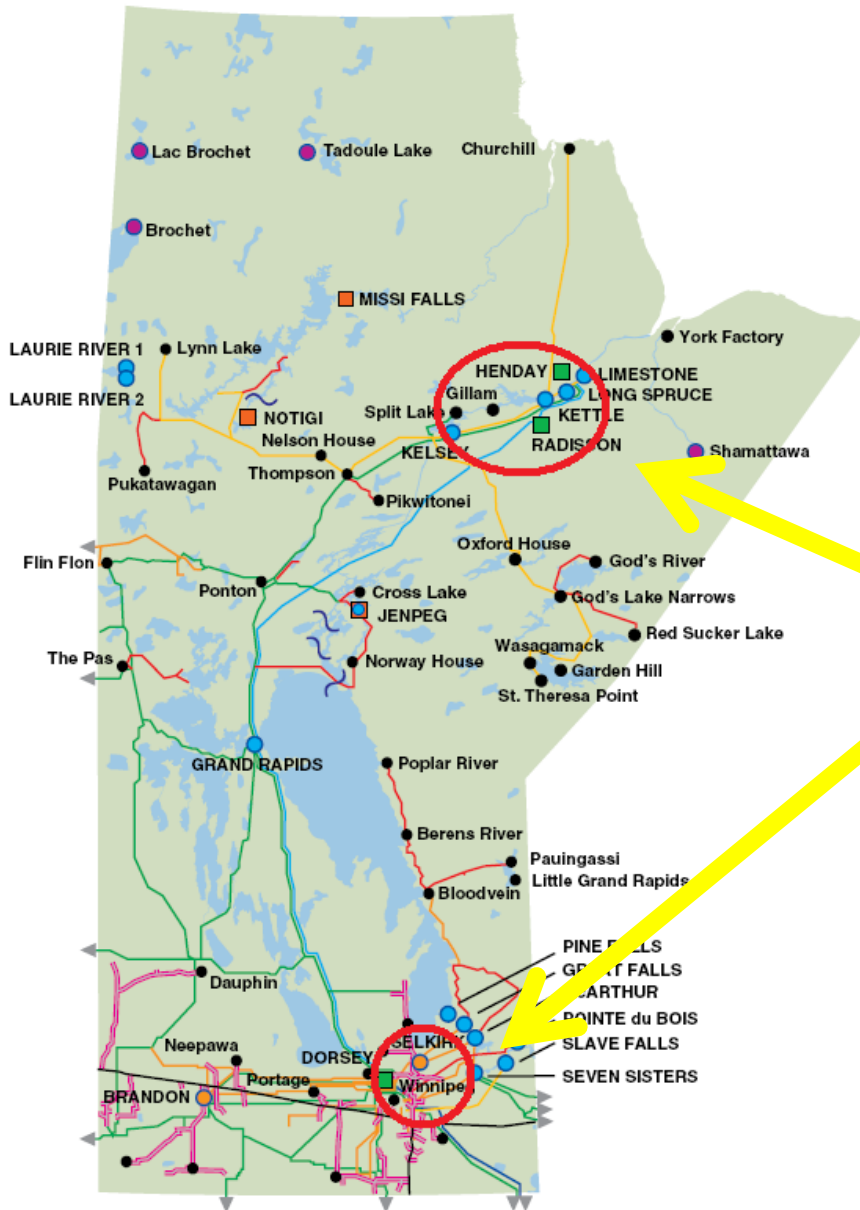
Date: **October 26, 2009**

“Building BiPole 3 down the west side of Manitoba is extremely costly and unnecessary. It will hurt Manitoba ratepayers for years to come.”

- John Roschuk, Electrical Engineering Specialist**
- Colin Craig, Canadian Taxpayers Federation**
- Jim Collinson, former UNESCO World Heritage Committee President**
- Jim Graham, P.Eng, Professor Emeritus, University of Manitoba**

Executive Summary:

- ***Forcing Manitoba Hydro to build BiPole 3 down the west side is a costly decision that cannot be justified on an economic, engineering or environmental basis.***
- ***The west side route will cost at least \$1-1.4 billion more for ratepayers than the more direct east side route.***
- ***Government data shows there is no justification for the west side route:***
 - ***At-risk caribou herds are present along both routes and their locations are constantly changing. We could not find evidence to support the argument that high voltage lines have negative impacts on caribou***
 - ***Annually, there is more tornado and lightning activity along the west route than the east route***
 - ***The portion of the east side area being set aside for UNESCO designation could receive the designation even with BiPole 3 running through it. A BiPole line could be built to largely avoid the area being nominated for designation.***
 - ***Negotiations could occur with Aboriginal communities for an east side route, just as they did for the construction of northern dams***
 - ***Costs cannot be passed on to U.S. customers – as Manitobans are the shareholders of hydro, every expense impacts our return on investment.***
- ***The provincial government should reconsider its directive and allow Manitoba to proceed with BiPole 3 down the east side of Lake Manitoba, as originally planned.***



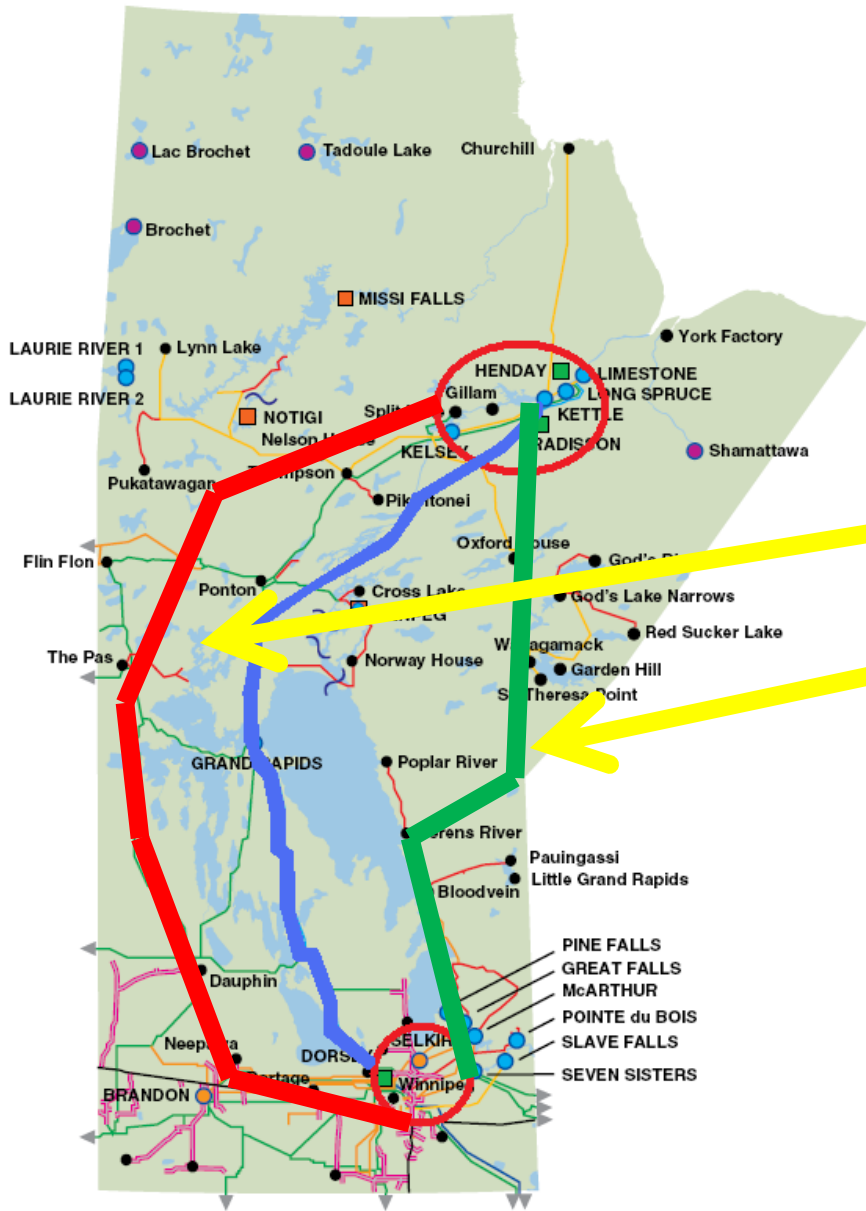
Background:

New power plants in northern Manitoba require construction of a new line to transport power to southern Manitoba



Background:

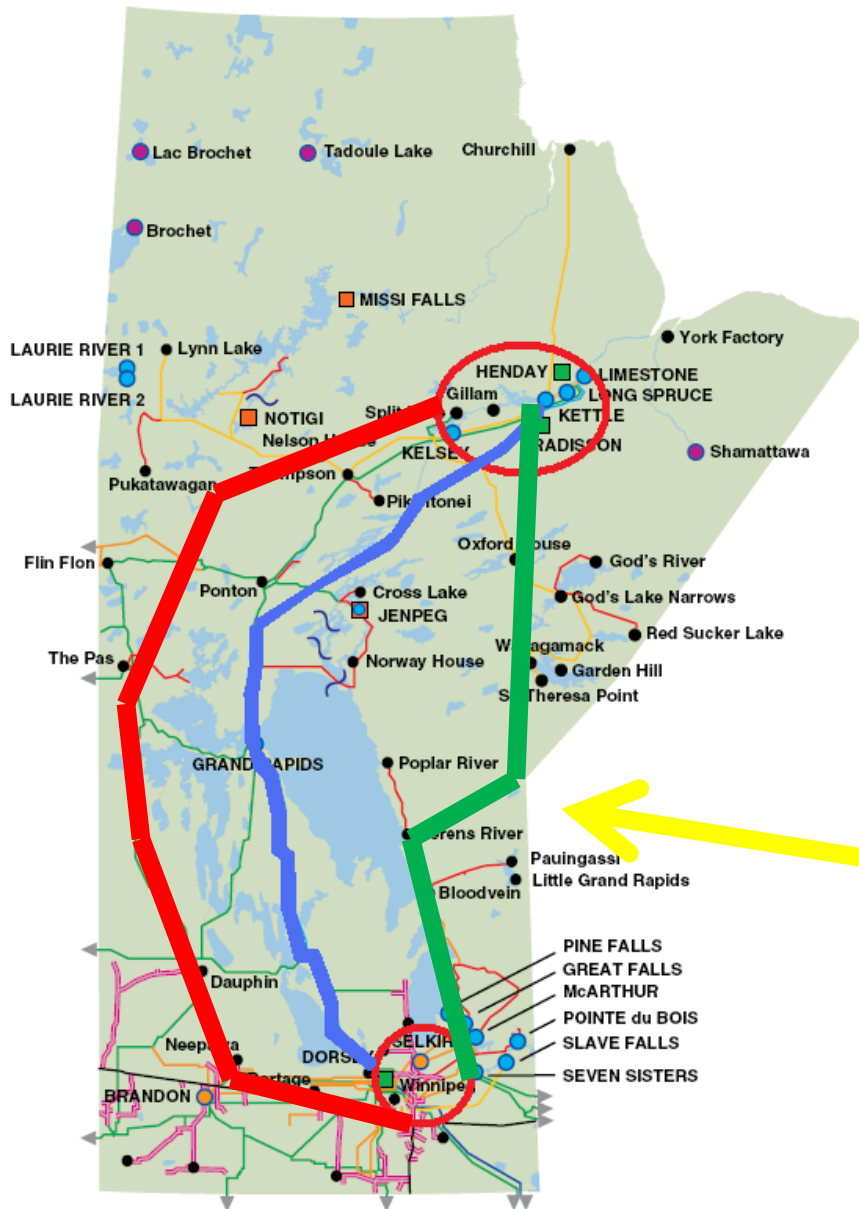
Placing the new line beside existing lines (BiPoles 1&2 shown in blue) is not being considered for security reasons; a wind “downburst” in 1996 knocked out 19 transmission towers along southern tip of this route



Background:

That leaves two options:

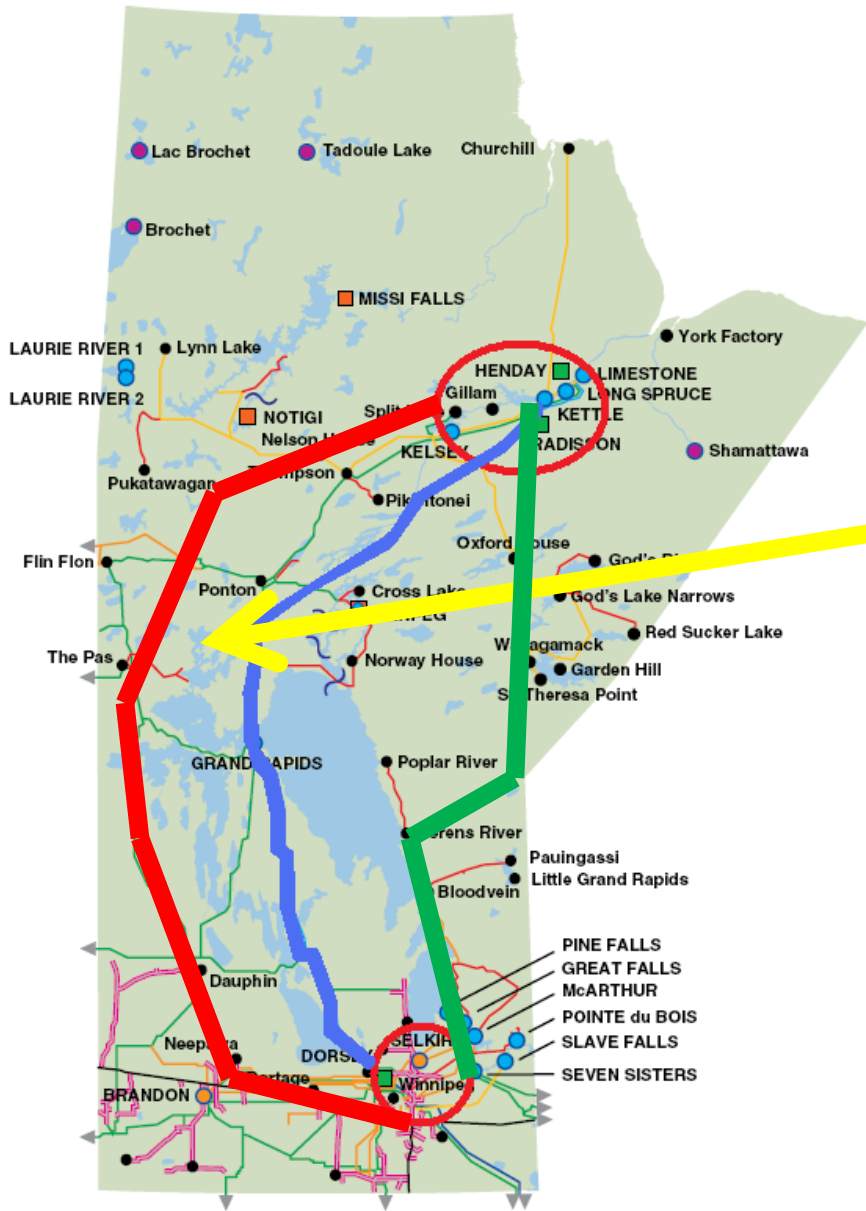
- 1) *The west side of the province*
- 2) *East of Lake Winnipeg*



Background:

The east side route is anywhere from 400kms to 600 kms shorter than the west side option and thus significantly cheaper.

For that reason, Manitoba Hydro had always planned on building the route down the east side.



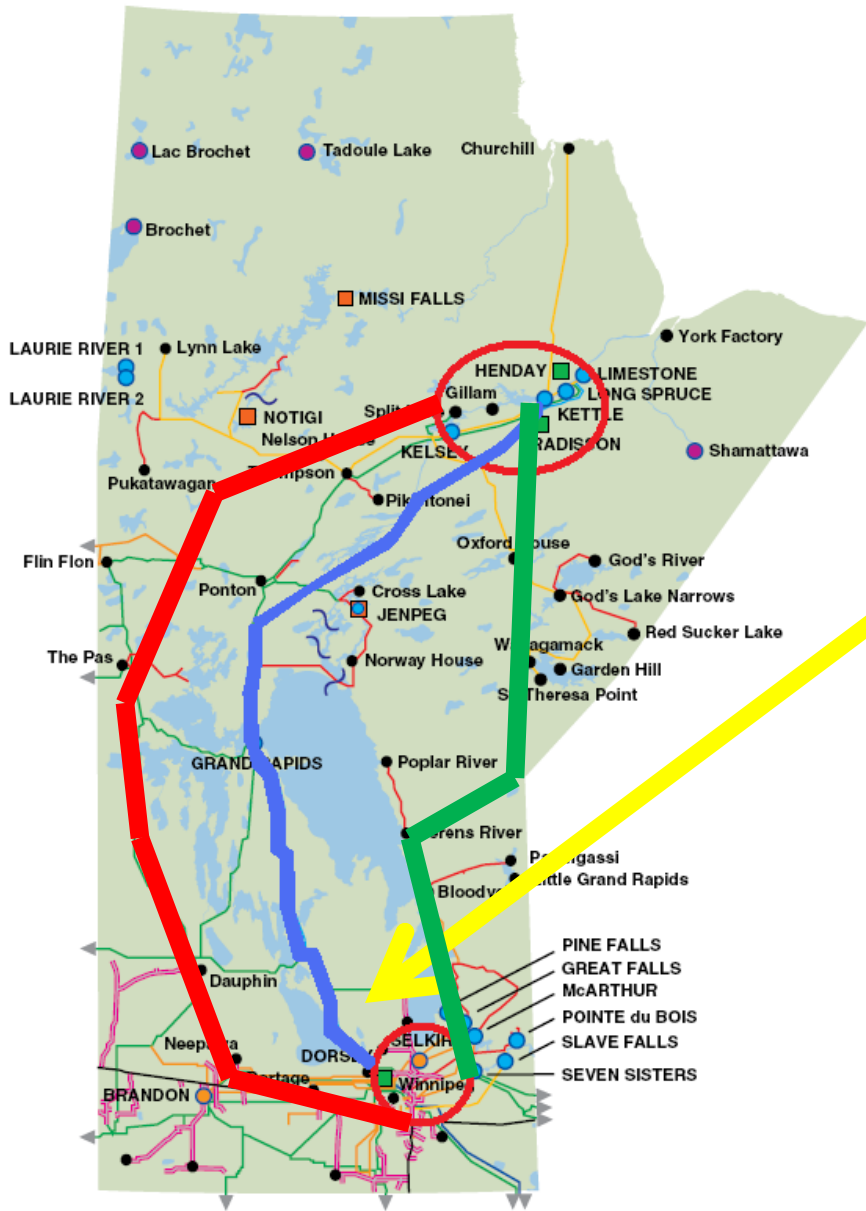
Background:

However, the provincial government has ordered Manitoba Hydro to build the line down the west side.

It was part of their 2007 election platform.

***Let's explore the
government's
claims for why the
line should be built
on the west side...***





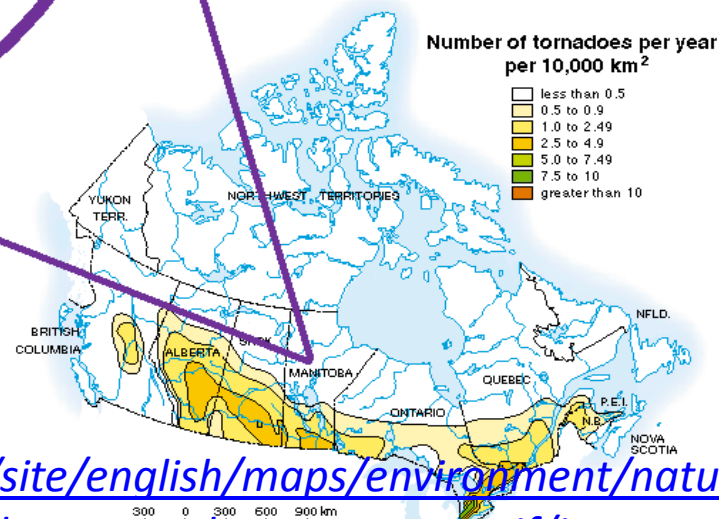
Claim #1 - Security

‘Placing BiPole 3 beside BiPoles 1 & 2 would pose a security threat such as the wind downburst in 1996’



Reality - Security

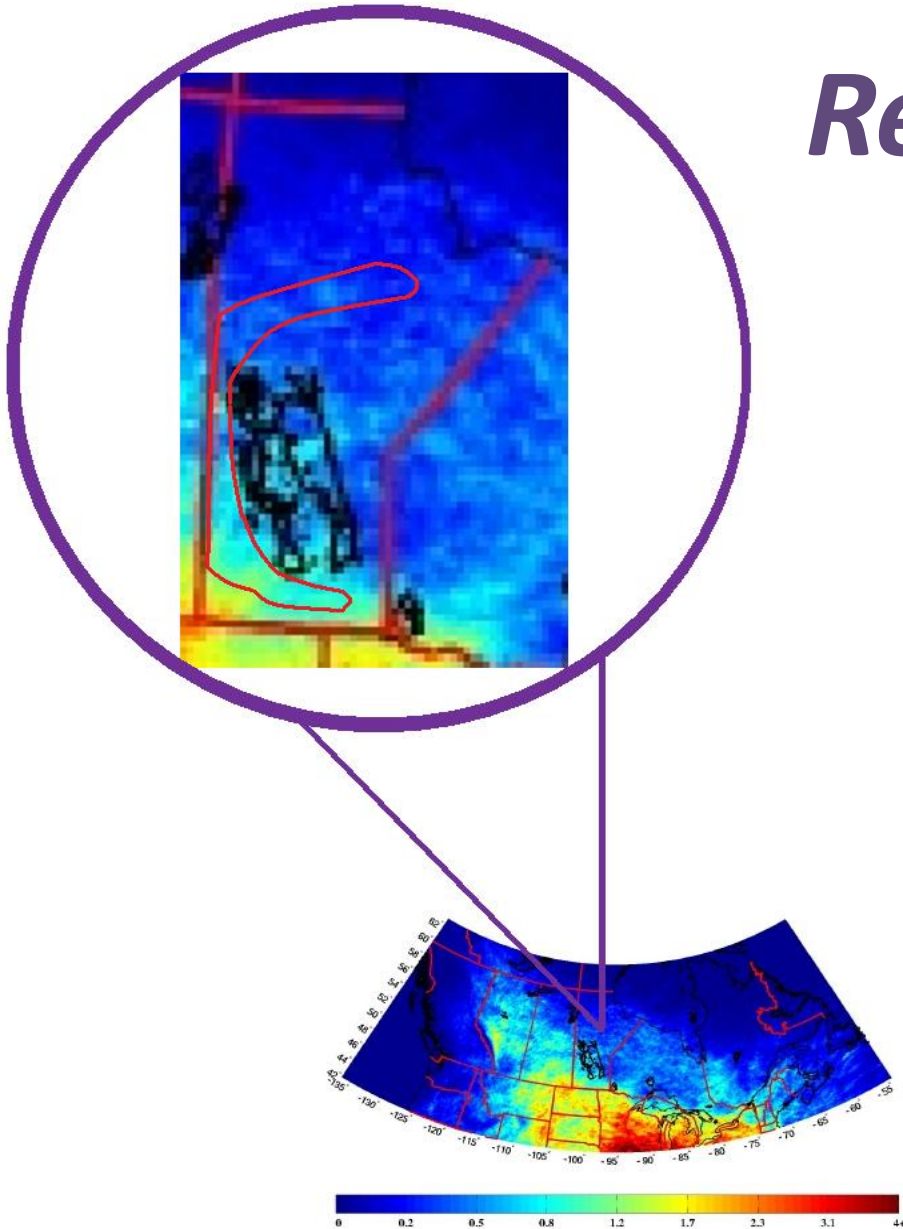
According to federal government data, running BiPole 3 down the west side will take it through Manitoba's "tornado corridor"



Source: http://atlas.nrcan.gc.ca/site/english/maps/environment/naturalhazards/naturalhazards1999/majortornadoes/number_tornadoes_per_year.gif/image_view

Reality - Security

Running BiPole 3 down the west side will take it through more lightning activity than the east side.



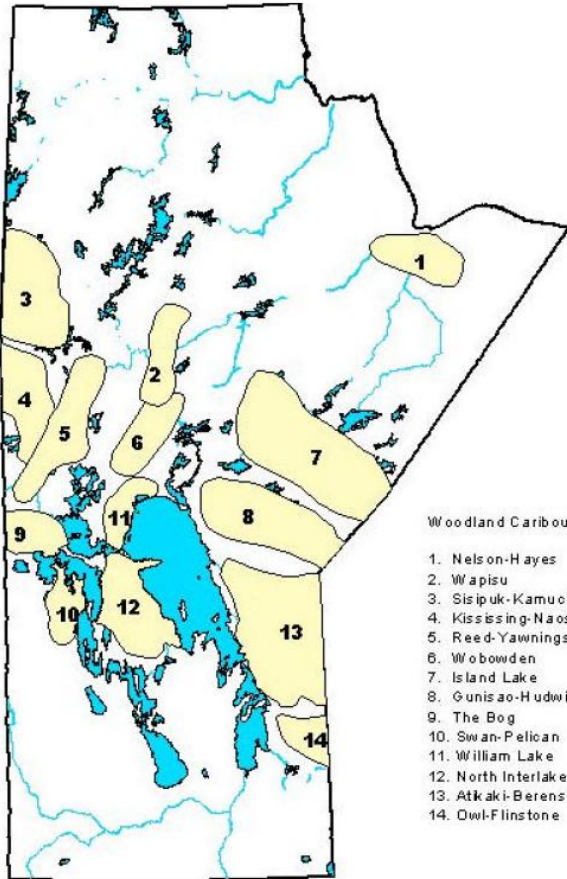
Claim #2 - Caribou

'Placing BiPole down the east side would hurt at-risk caribou herds'



Reality - Caribou

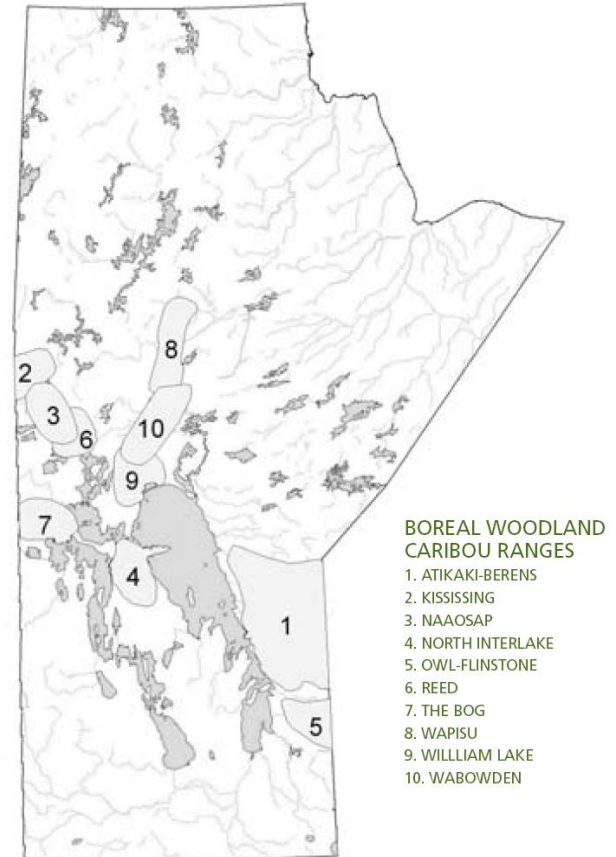
2000



According to provincial gov't data, there are at-risk caribou herds on both sides of MB.

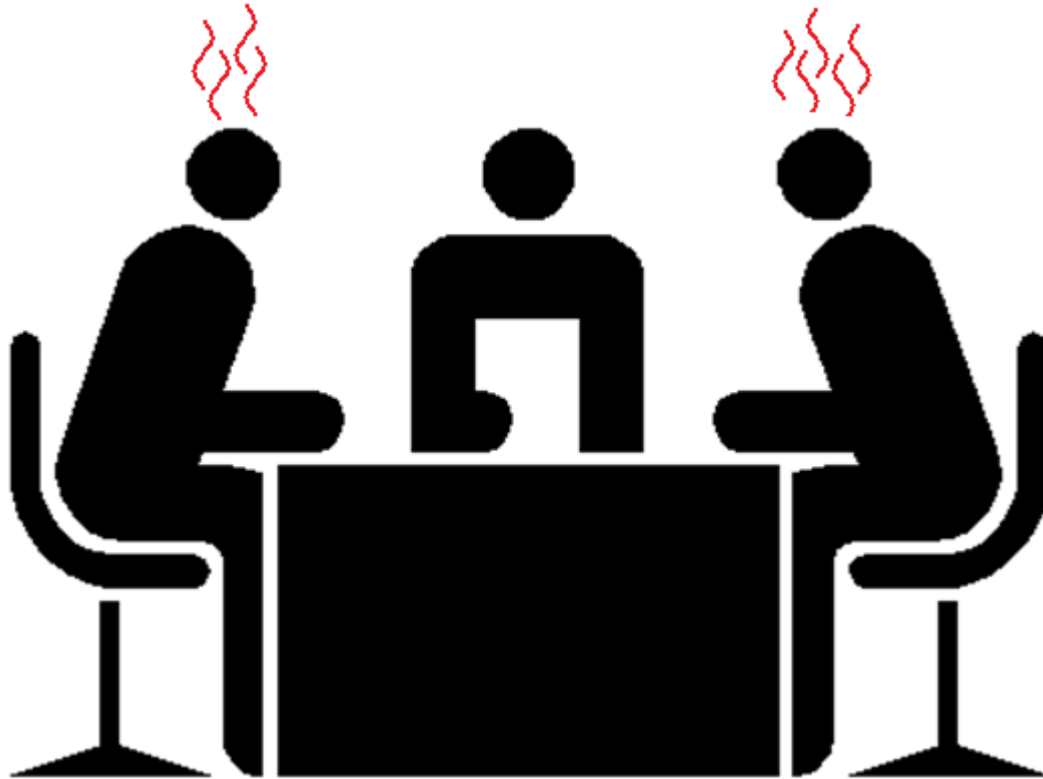
Further, their locations vary from year to year. We could not find evidence of existing lines hurting existing herds.

2006



Claim #3 – Aboriginal Communities

‘It will be too difficult to negotiate with Aboriginal communities on the east side’



Reality – Aboriginal Communities

The provincial government is in the process of building new roads down the east side. It is reasonable to assume that negotiations could occur as is being done with aboriginal bands up north for hydro dams.



Claim #4 – “Pristine Boreal Forest”

***‘The east side forest
is pristine and thus,
running a power-line
through it would
ruin it’***



Pimachiowin Aki...the land that gives life
WORLD HERITAGE PROJECT AREA



Reality – Pristine Forest

Here is the area that is dubbed “pristine” and is being set aside for preservation

Source: Presentation by NDP MLA [Rob Altemeyer](#) (slide 10)

Pimachiowin Aki...the land that gives life
WORLD HERITAGE PROJECT AREA



Reality – Pristine Forest

However, one needs
to add in:

Pimachiowin Aki...the land that gives life
WORLD HERITAGE PROJECT AREA



Reality – Pristine Forest

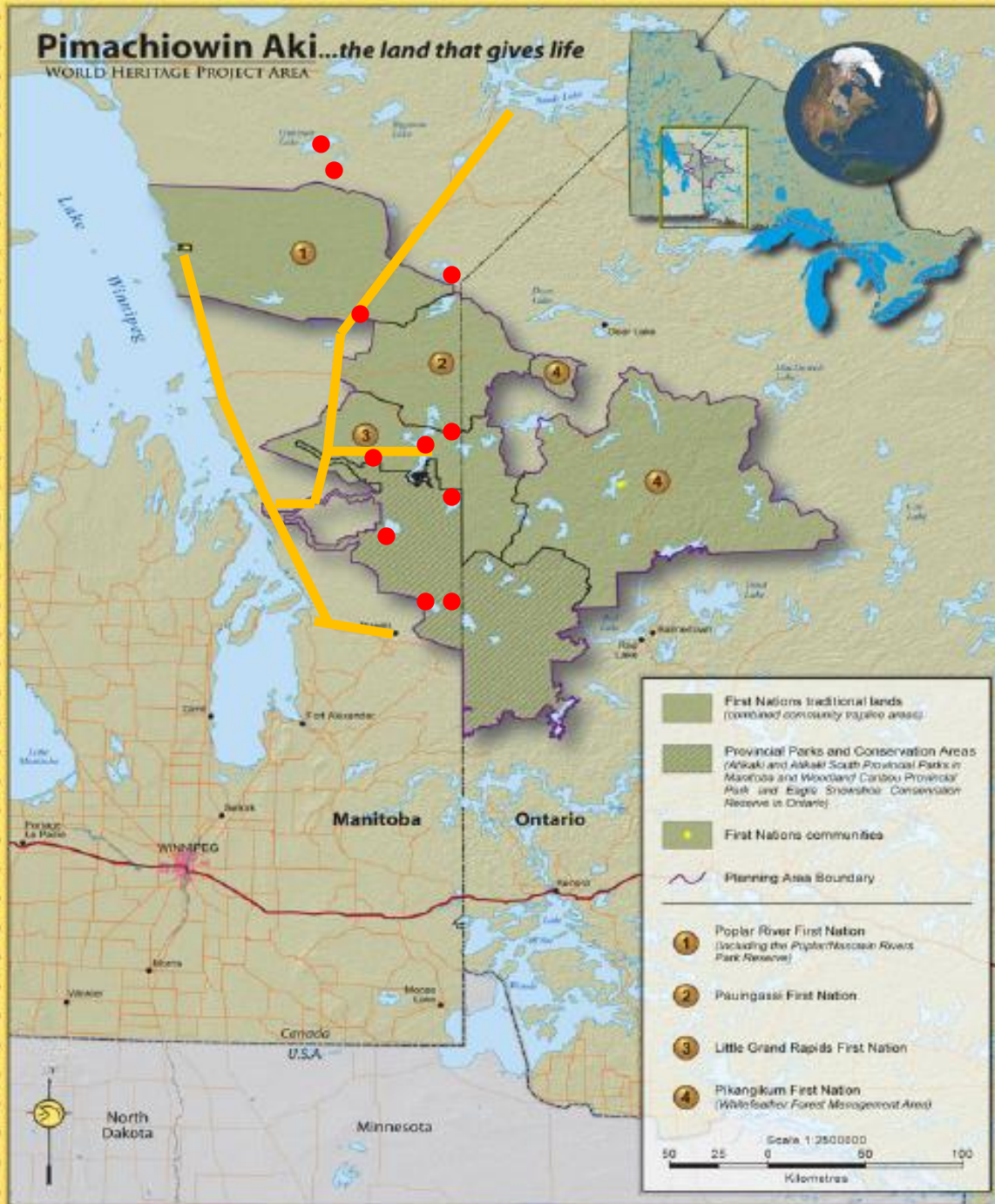
However, one needs
to add in:

1) Winter roads

Sources:

1) 2007/08 Manitoba Highway Map

Pimachiowin Aki...the land that gives life
WORLD HERITAGE PROJECT AREA



Reality – Pristine Forest

However, one needs
to add in:

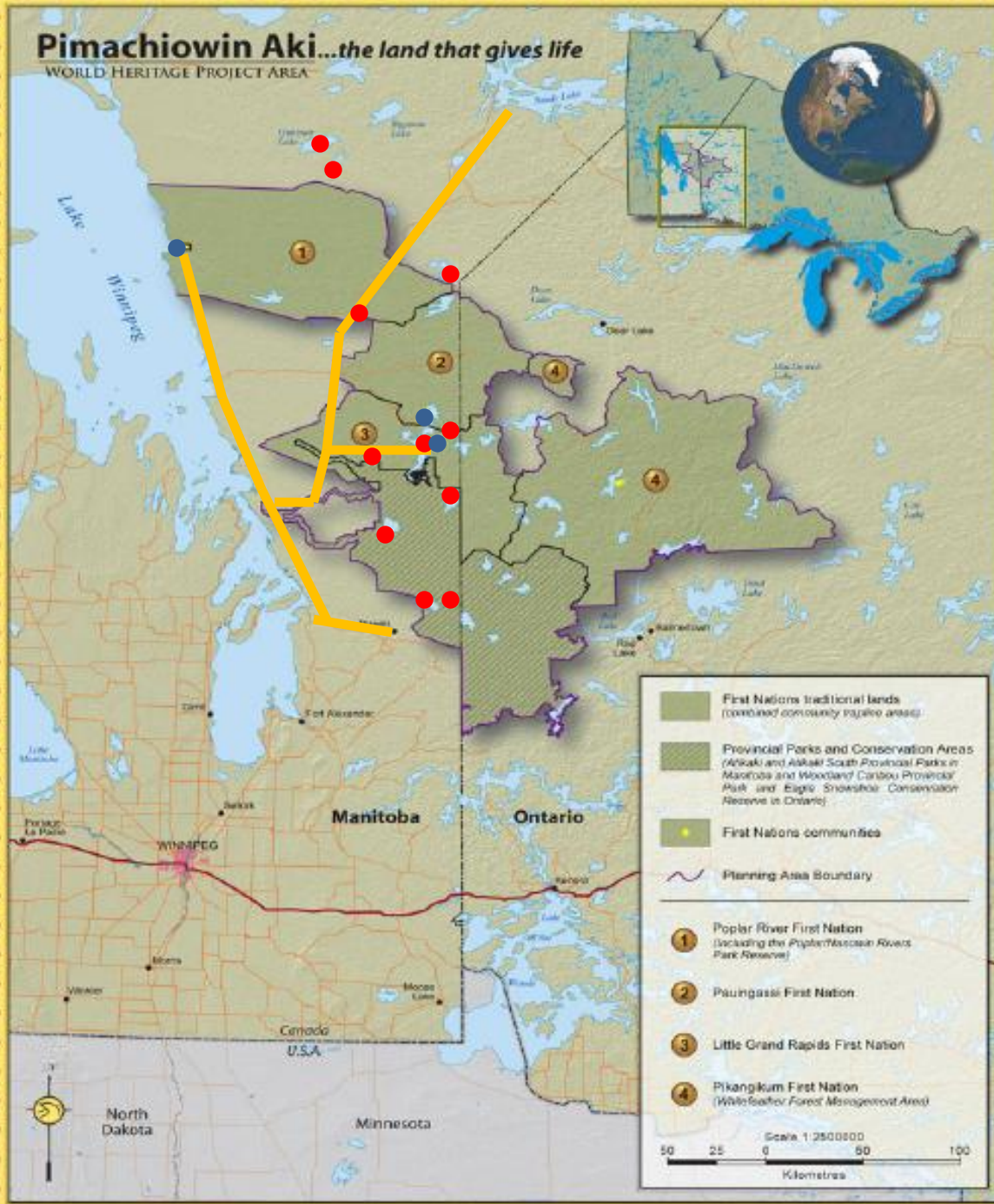
- 1) Winter roads
- 2) Tourist camps

Sources:

- 1) 2007/08 Manitoba Highway Map
- 2) [Travel Manitoba Guide](#)

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WORLD HERITAGE PROJECT AREA



Reality – Pristine Forest

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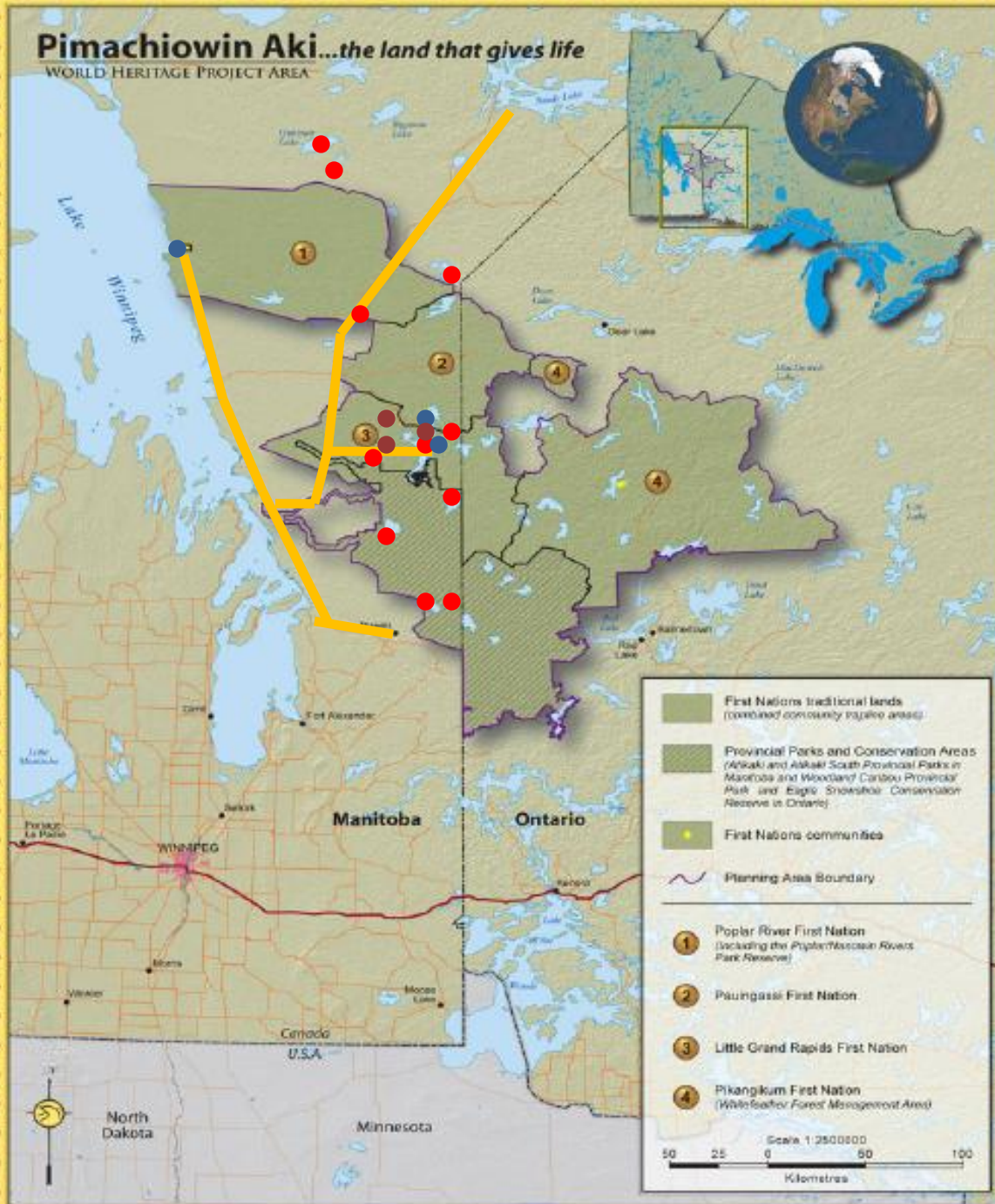
- 1) Winter roads
- 2) Tourist camps
- 3) First Nations

Sources:

- 1) 2007/08 Manitoba Highway Map
- 2) [Travel Manitoba Guide](#)
- 3) 2007/08 Manitoba Highway Map

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Reality – Pristine Forest

However, one needs to add in:

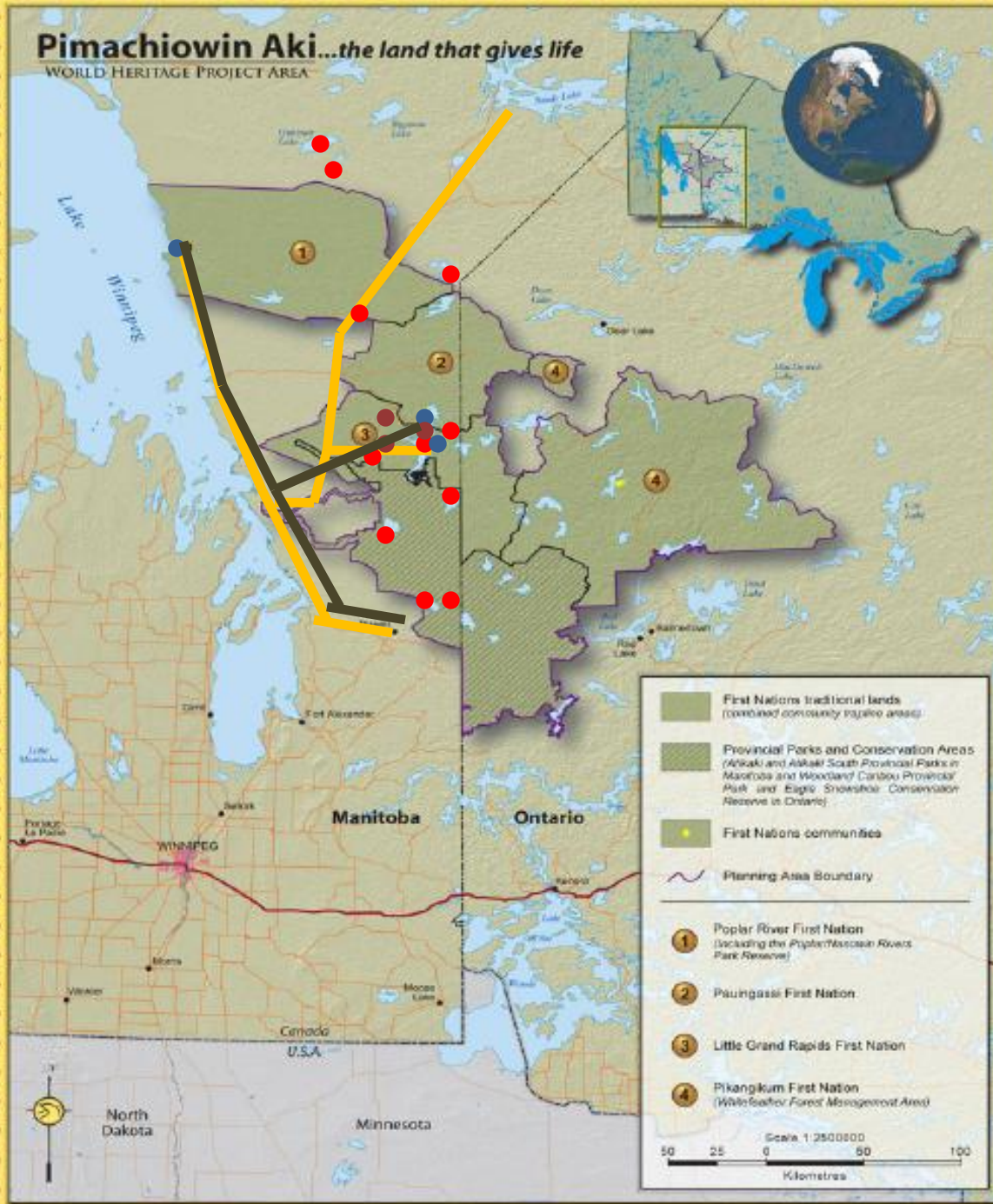
- 1) Winter roads
- 2) Tourist camps
- 3) First Nations
- 4) Mining activity

Sources:

- 1) 2007/08 Manitoba Highway Map
- 2) [Travel Manitoba Guide](#)
- 3) 2007/08 Manitoba Highway Map
- 4) [Government of MB](#)

Pimachiowin Aki...the land that gives life

WORLD HERITAGE PROJECT AREA



Reality – Pristine Forest

However, one needs to add in:

- 1) Winter roads
- 2) Tourist camps
- 3) First Nations
- 4) Mining activity
- 5) Hydro lines

Sources:

- 1) 2007/08 Manitoba Highway Map
- 2) [Travel Manitoba Guide](#)
- 3) 2007/08 Manitoba Highway Map
- 4) [Government of MB](#)
- 5) [Manitoba Hydro 2008 Annual Report](#)

Claim #5 –UNESCO Designation



“Running BiPole 3 through the east side would prevent efforts to secure UNESCO designation for part of the east side’s forest”

Reality – UNESCO Designation



“BiPole 3 could be run down the east side without preventing UNESCO designation”

- ***Jim Collinson, former UNESCO World Heritage Site Committee President***

Reality – UNESCO Designation

A drop in the bucket...

- The forest area being set along the east side of Manitoba represents 0.046% of Canada's boreal forest
- An east side transmission line would take up approximately 0.0000075% of the land being set aside
- By comparison, 3% of Banff National, a World Heritage site, developed (eg. roads, rail, transmission lines, town sites, etc.)



Banff National Park is an UNESCO World Heritage Site that has successfully balanced environmental preservation with limited development.



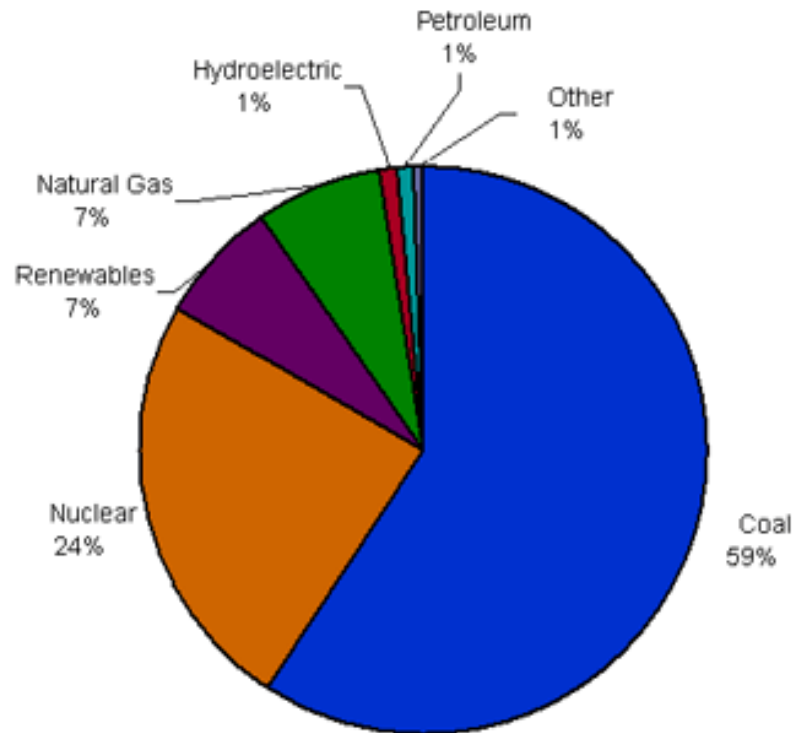
Claim #5 – Export Sales



“Running BiPole 3 through the east side would hurt export sales as Americans won’t buy the power if it runs through the east side forest”

Reality – Export Sales

Considering most of Minnesota’s power comes from coal plants, it is questionable to suggest they would not buy hydro power from Manitoba for environmental reasons.



Minnesota’s power by energy source [2007](#)

Claim #5 – Americans Can Pay For It



“The additional cost of building BiPole 3 down the west side can be passed on to U.S. customers.”

Reality –Americans Can Pay For It

Manitobans are the shareholders of Manitoba Hydro. Therefore, the costs can't simply be passed on to American customers.



The additional costs of the west route will negatively impact Manitoba Hydro's return on investment, thus reducing the net benefit to Manitoba shareholders.

Other Issues

Corrosion:

Unlike AC power, DC power has unique characteristics. One of the major ones being “stray ground currents” that will cause electrochemical corrosion of above ground and subterranean metallic structures.

In English: the west side route will send a electrical current into the ground that will cause a number of metal pipes, railroad lines and other structures to rust. For example: one ampere of DC current flowing through iron will erode twenty pounds of iron in one year.



Migratory Birds:

- The proposed **west routes** would negatively impact huge volumes of protected migratory birds.
- The birds will be at risk for collisions with the transmission lines as the areas are used right now for “staging” (feeding).
- Transmission lines annually kill 130-174 billion birds annually in the U.S.
- The east side would pose considerably less conflict for migratory birds



Cost: Initial Estimate

Original estimate for additional cost of west side route (~450kms longer)



Construction	\$410 million
Line losses	\$230 million
Interest	\$412 million*
<u>Land easements</u>	<u>+ ??? million</u>
	\$1.052 billion

* CTF estimate based on Manitoba Hydro's borrowing activity – see page 108 of [Manitoba Hydro's 2008-09 Annual Report](#).

Cost: Revised Estimate

However, new west side routes proposed by Manitoba Hydro are now as high as 585kms longer than routes along the east side. That could proportionately boost costs to at least:

Construction	\$528 million
Line losses	\$296 million
Interest	\$531 million
<u>Land easements</u>	<u>+ ??? million</u>
	\$1.355 billion



Conclusion:

Our analysis concluded that a west side route for BiPole 3 cannot be defended on an environmental, engineering or economic basis.

We encourage Manitobans to urge the government to reconsider the western route.

Premier Greg Selinger's Office:

945-3714



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