SHOULD MANITOBA GO NUCLEAR?

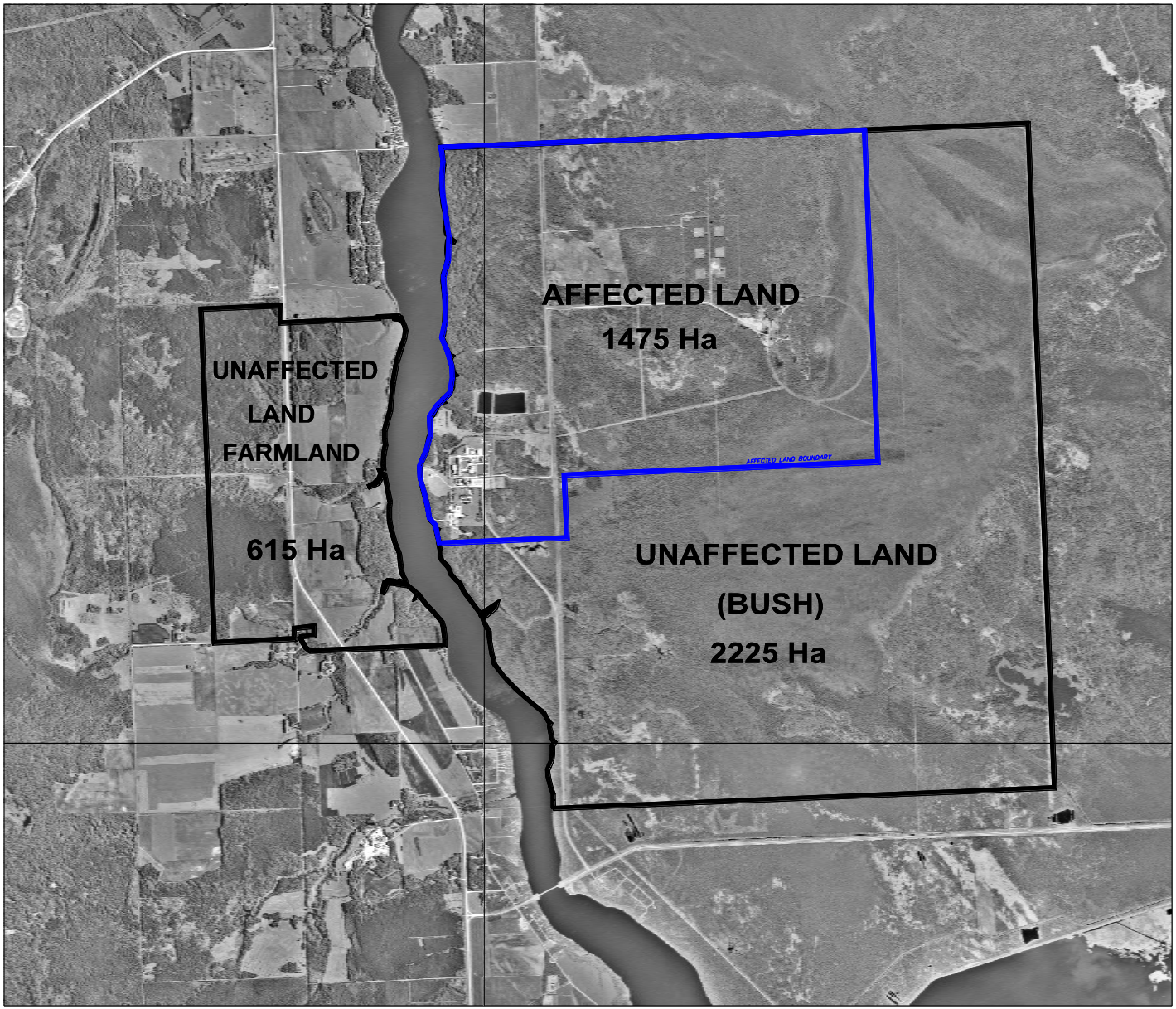
L.A. Simpson and Blair Skinner

Former and Present Mayors of Pinawa Manitoba

MANITOBA'S NUCLEAR HISTORY

- WNRE established in 1963 as 2nd research site for AECL
- Pinawa selected for its natural beauty and recreation potential
- Town grew to a population of 2200 with AECL employing over 1000
- Major programs were Nuclear Waste Management and Reactor Safety Research
- Dark ages in the '90s. AECL to close WL and consolidate at CRL
- Over 300 staff will be decommissioning the site for decades
- Some AECL programs continue at the site
- Site will remain under CNSC license for the rest of the century


N
Lake
Winnipeg
Ontario
Grand Beach
Pine Falls
Lac du Bonnet
Selkirk
Whiteshell
Provincial
Park
Seven Sisters
Beausejour
Oakbank
Whitemouth
Winnipeg
Dugald
Anola
West Hawk
Falcon Lake
Steinbach
11
59
317
211
307
44
12
302
206
15
75
55
1


AFFECTED LAND
1475 Ha
AFFECTED LAND BOUNDARY
UNAFFECTED
LAND
FARMLAND
615 Ha
UNAFFECTED LAND
(BUSH)
2225 Ha

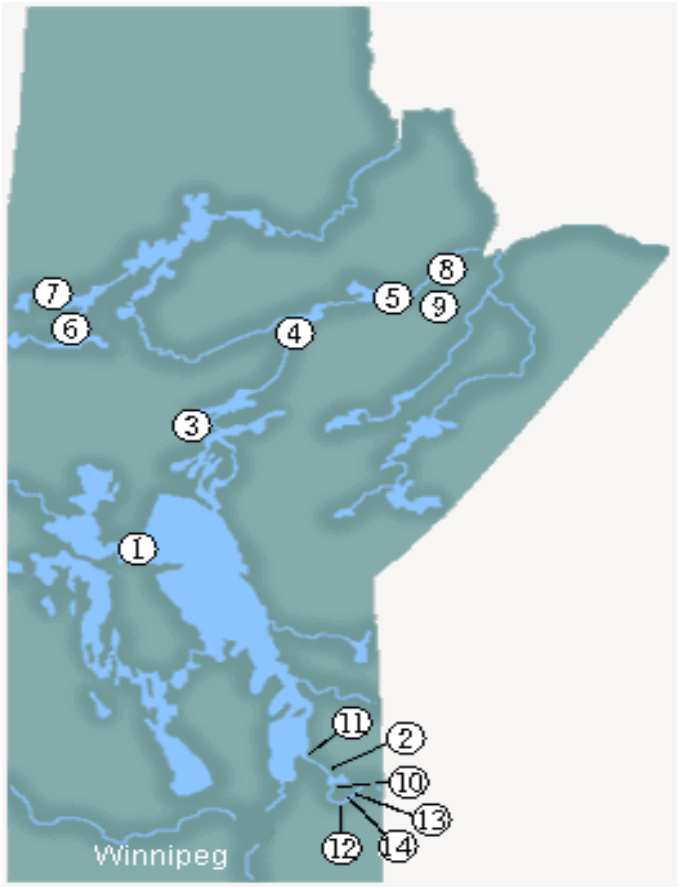
ADVANTAGE OF A LICENSED SITE

- Whiteshell has been under nuclear license for 45 years
- To obtain a construction license for a virgin site would take years longer than for upgrading Whiteshell's license
- The community is familiar with the industry and is mainly pro-nuclear
- Infrastructure including water & sewage is in place
- Site is ideal not just for power reactor but any nuclear facility involving the fuel cycle

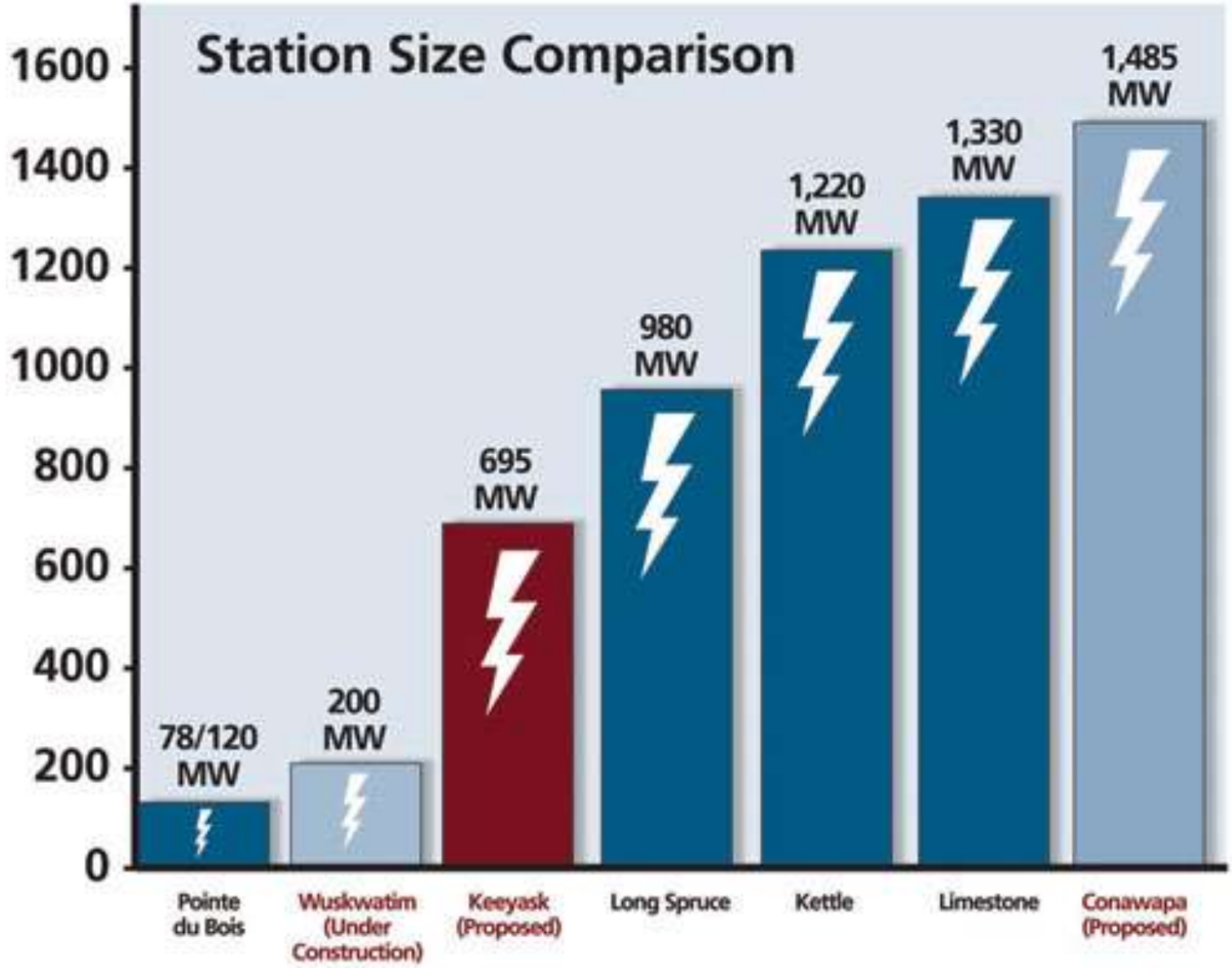
WHAT ABOUT ALL THAT HYDRO POTENTIAL?

- Only 2 candidates for base-load are nuclear and hydro
- Manitoba supplies a 5000MW grid with 96% hydro
- 4500MW are generated on the northern rivers
- Next station planned is Conawapa on the Nelson River generating 1485 MW

Manitoba Hydro Generating Stations



1. Grand Rapids
2. Great Falls
3. Jenpeg
4. Kelsey
5. Kettle
6. Laurie River I
7. Laurie River II
8. Limestone
9. Long spruce
10. McArthur
11. Pine Falls
12. Seven sisters
13. Point DuBois
14. Slave Falls


Station Size Comparison
1600
1400
1200
1000
800
600
400
200
0
78/120 MW
200 MW
695 MW
980 MW
1,220 MW
1,330 MW
1,485 MW
Pointe du Bois
Wuskwatim (Under Construction)
Keeyask (Proposed)
Long Spruce
Kettle
Limestone
Conawapa (Proposed)

STATION	CAPACITY MW	DATE COMPLETED	COST M$	COST $/MW	RIVER
KETTLE	1220	1974	240	$0.20	NELSON
LIMESTONE	1990	1990	1430	$1.07	NELSON
CONAWAPA (PROP)	1485	FUTURE	7200	$5.14	NELSON
WUSKWATIM	200	UNDER CONSTRUCTION	1600 (EST.)	$8.00	BURNTWOOD

WHAT ABOUT NUCLEAR

- Capital cost of hydro rising rapidly, faster than nuclear?
- Nuclear would be closer to markets, cut transmission costs
- Long term high quality employment
- We need a full assessment/study including the need for electric/hydrogen transportation

FACTORS AFFECTING CAPITAL COSTS	HYDRO	NUCLEAR
CONSTRUCTION COSTS	HIGHER	LOWER
FINANCING RATES	SAME	SAME
OPERATING COSTS	LOWER	HIGHER
TRANSMISSION COSTS	HIGHER	LOWER
FOOTPRINT	KILOMETERS	METERS
SENSITIVITY TO DROUGHT CONDITIONS	HIGH	LOW
LAND SETTLEMENT ISSUES	HIGH	LOW
PERMANENT JOB CREATION	LOW	HIGH
CONSTRUCTION TIME (AFTER CONSTRUCTION LICENSE)	8-9 YEARS	4 YEARS

LOCATION, LOCATION & LOCATION

- Less than 100 km from new Riel Converter station, close to markets
- Transmission corridor from Winnipeg River stations passes through site
- Winnipeg River passes through site
- Nuclear friendly population
- Wonderful quality of life in Pinawa and surrounding communities, can attract high quality personnel

NUCLEAR IS SAFE

❑ What do we do with the “waste”?

- NWMO plan complete and accepted by Government of Canada
- Spent fuel will be recoverable and stored at central repository pending decisions on recycling
- Recycling will substantially reduce long-lived waste
- Remaining waste will be smaller volumes
- No technical reasons for not going ahead with plans

NUCLEAR IS SAFE (cont'd)

- **No "safe" radiation exposure**
  - Impossible to prove or disprove that statement
  - No reliable evidence of cancer near over 400 operating power reactors
  - There is evidence of hormesis i.e. a small exposure to radiation may be beneficial

NUCLEAR IS SAFE (cont'd)

- **Radiation Dose at Plant Boundary**
  - Average citizen gets 2.7 mSv + Meds
  - CNSC prohibits exceeding 1 mSv at plant boundary
  - Plant operators prescribe and achieve <0.01 mSv
  - No data shows increase in cancers for exposures up to 100 mSv

NUCLEAR OPTION COMMITTEE OF COUNCIL

- **Council of LGD of Pinawa Focus on Economic Development**
  - Develop other activities at WL (last 10 years)
  - Last 4 years developing support for nuclear power generation
  - First formal public step November, 2006
  - Resolution at Association of Manitoba Municipalities annual convention

NUCLEAR OPTION COMMITTEE OF COUNCIL

- **AMM resolution to**
  - Lobby Province of MB and MB Hydro to:

    - Include nuclear in Long Range Plan

    - Recognize the Whiteshell Laboratories site as an asset due to access to cooling water, transmission, willing host community, and existing nuclear site license

  - Resolution passed with little opposition

NUCLEAR OPTION COMMITTEE OF COUNCIL

- **Nuclear Option Committee**
  - Committee of Pinawa Community Development Corporation formed in 2007
  - AECL has agreed to participate as resource
  - Letter of Support from Nuclear Workers Council
  - Town and Rural Municipality of Lac du Bonnet agreed to participate on committee

NUCLEAR OPTION COMMITTEE OF COUNCIL

- **Building support through networking**
  - Attending CNA Winter Meetings
  - Member of CANHC
  - Attended EnerCan West Conference in Regina March, 2009
  - Member of Canadian Nuclear Society

NUCLEAR OPTION COMMITTEE OF COUNCIL

- **Approach MB Hydro and Province of MB**
  - Two meetings held in 2008
  - Minister Responsible for MB Hydro, Senior Officials of MB Hydro and AECL in attendance
  - Province/MB Hydro not prepared to pursue nuclear at this time due to focus on hydro
  - Agreed nuclear option good alternative should power from north be delayed
  - Will transmit power generated by private sector

NUCLEAR OPTION COMMITTEE OF COUNCIL

❑ Media Coverage

- Nuclear issue raised twice by newspaper and radio
- Expected negative feedback but little received
- One local, vocal opponent
- Generally, people recognize that economic benefits outweigh safety and waste concerns
- Related newspaper reported discussions to strengthen transmission between MB/ Sask

NUCLEAR OPTION COMMITTEE OF COUNCIL

- **Should Manitoba Consider Nuclear?**
  - We have first two ingredients for nuclear new build
    - Suitable site
    - Willing host community
  - Diversification of supply would enhance Manitoba's flexibility for domestic and export supply
  - Expect growth in export opportunities

SUMMARY

- We have the site, bring us your business
- We want a feasibility study on hydro vs nuclear in MB
- We would like to see more movement on a western grid and power sharing
- Remember nuclear power is:
  - Clean
  - Reliable
  - Sustainable


www.Pinawa.com