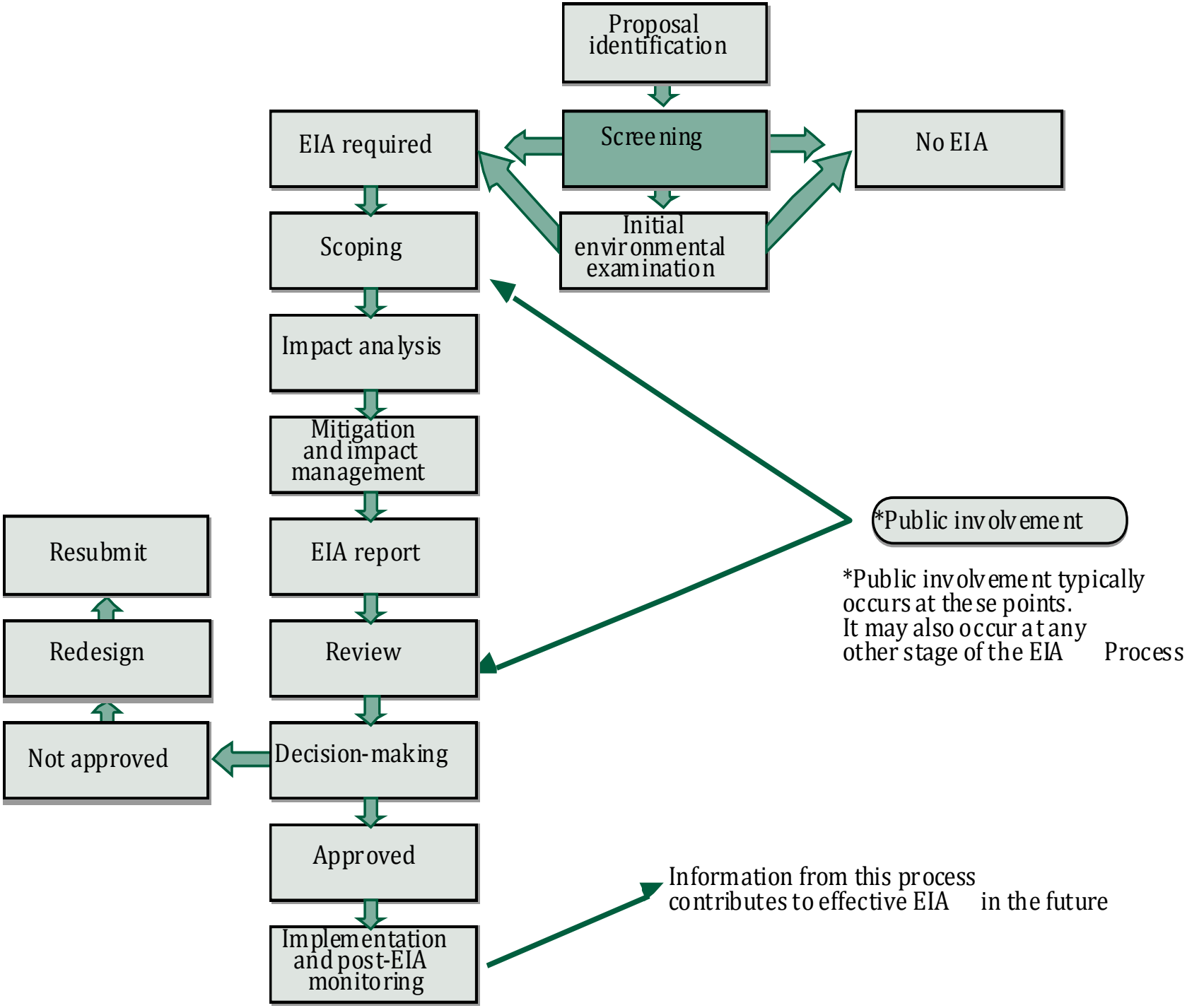
Chapter 6: Planning and Management: Process, Method, and Product


Proposal identification
Screening
EIA required
No EIA
Initial environmental examination
Scoping
Impact analysis
Mitigation and impact management
EIA report
Review
Decision-making
Not approved
Redesign
Resubmit
Approved
Implementation and post-EIA monitoring
*Public involvement
*Public involvement typically occurs at these points.
It may also occur at any other stage of the EIA Process
Information from this process contributes to effective EIA in the future

5. Components (Methods) of an EIA

1. Air and Climate	
2. Soils and Geology	
3. Water	a. physical hydrology
	b. water quality
4. Ecology	a. Legislative Background and interest groups
	b. Impact prediction and significance
5. Terrestrial Ecology	a. scoping and baseline studies for flora and fauna
6. Freshwater Ecology	a. impact prediction
	b. impact significance
7. Cumulative impacts	a. ensuring consistency and accuracy
	b. interactions between impacts as and other projects (predict)

(Socio-Economic)

6. Components (Methods) of an EIA

1. **Socio-economic Impacts**: *Economic*
   a. Impact prediction: (direct employment impacts)
   b. Impact prediction: (wider economic impacts)

2. **Socio-economic Impacts**: *Social Impacts*
   a. Cultural impacts
   b. Welfare (Safety / Risk)

3. **Noise**
4. **Traffic**
5. **Landscape**
6. **Archaeological and other materials and cultural assets**
7. **Public Participation and Mediation/Mitigation**

Wind Power in the North

The Big Thunder Wind Project

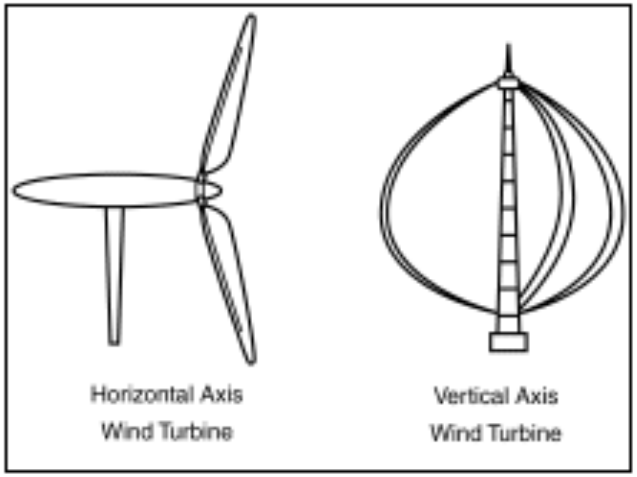
HORIZON

HORIZON WIND INC.

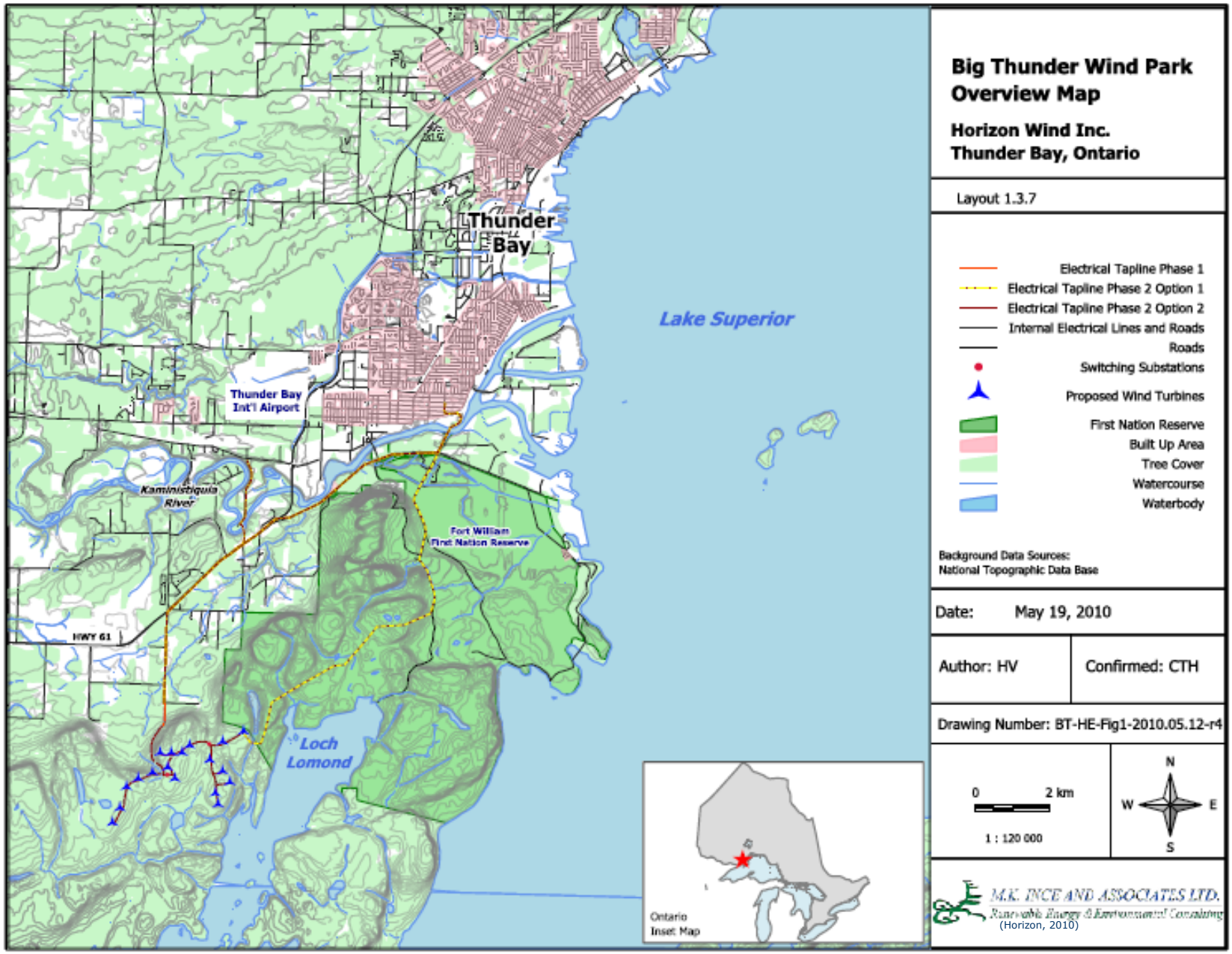
Wind Power

- Wind turbines capture the kinetic energy in the wind and convert it to electricity. As the wind moves over the blades of a wind turbine, the shape of the blade is such that the air pressure beneath it increases and the air pressure above it decreases.
- This causes the blades to rotate which turns a shaft that moves magnets in the generator thereby creating electricity.

Turbine Models -



The Big Thunder Wind Project



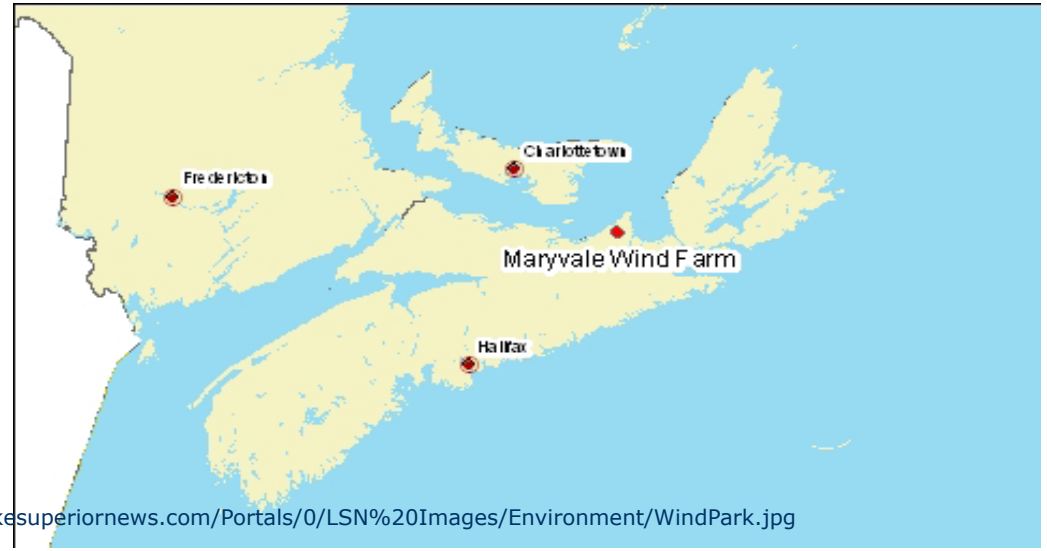
(Horizon, 2010)

The Big Thunder Wind Project

- Horizon Wind Inc., as general partner of Horizon Legacy Energy Corporation, is a developer, owner, and operator of wind energy projects in Canada.
- Horizon Legacy Energy Corporation has worked on one other project of smaller scale in Maryvale, Nova Scotia.

HORIZON

HORIZON WIND INC.



http://www.lakesuperiornews.com/Portals/0/LSN%20Images/Environment/WindPark.jpg

The Big Thunder Wind Project

- The Big Thunder Wind Development will be developed entirely on private lands owned by the City of Thunder Bay, located within the Municipality of Neebing.
- Eighteen wind turbines, each rated at 1.5 MW capacities, are to be installed but installation capacity can rise to 54 turbines.
- These turbines will have a tower height of 100 m and blade length of 41 meters. The maximum height of the wind turbines will be 141 m.

The Big Thunder Wind Project

- Calculation of Approximant Profit from Big Thunder Wind Farm to Horizon Inc.
  - The government of Ontario pays 13.5 c/kWh for wind power
  - Worldwide average cost to generate wind power = 6.2 c/kWh
    - Profit = 7.3 c/kWh
  - One 1.5 MW turbines produces approx. 4600 mWh/year
    - Calculation:
      - 4600 mWh = 4600000 kWh
      - 4600000 kWh x 0.073 = $335,800/year/turbine
      - Phase 1: 18 turbines = $6,044,400.00/year
      - Phase 2: 30 turbines = 10,074,000/year
      - Phase 3: 54 turbines = 18,133,200/year

Big Thunder Wind Park

- Concerns Raised by Horizon Inc.
  - Flora concerns
    - Square Top Mountain
  - Faunal concerns
    - Bats, Peregrine Falcons
  - Health problems
    - Ice Throws, Shadow Flicker, Noise
  - Turbine issues
  - View shed analysis

Local Opposition

- Nor'Westor Mountain Escarpment Protection Committee (NMEPC)
  - Was created and driven by volunteers due to the need to protect the Nor'Wester Mountain Escarpment from development that has the potential to harm the natural environment and the health of the residents

Local Opposition

- Issues Raised by NMEPC
  - Decommissioning plan
  - Co-existence with Loch Lomond Ski Area
  - Access road locations
  - Property values
  - View shed analysis

Local Opposition

- View Shed Analysis

Location	Group	Total View Shed Number
Deepwood Drive	Horizon	15
	NMEPC	18
	Dillon	11
Loch Lomond and Hwy. 61	Horizon	12
	NMEPC	18
	Dillon	11
Loch Lomond Ski Area	Horizon	12
	NMEPC	13
	Dillon	9

(Irene Bond, 2010)

Local Opposition

- Current Situation
  - The city council as stated in Thunder Bay has approved the executing of the lease and has approved 14 of the 18 locations set for turbines. However pre-election and post-executing of the lease Horizon commenced a law-suit against the city of Thunder Bay for 126,000,000 in damages.

"City Council is fulfilling its obligations to move forward on this project having completed its due diligence. The City has been responsible and fair and will not be intimidated by the lawsuit or its timing a week before the municipal election."

– City of Thunder Bay

Recommendations (Pre-execution)

- Do not lease the 17,000 acre tract until better participation – or in a sense a sharing agreement is developed in regards to profits.
  - City profit $250,000/year
- Build a community wind park and pumping station supported by a 20 year contract from the province for the benefit of local citizens such as: a moratorium on city takes, and the development of stronger local varied economy which would better resist economical ups and downs

Recommendations (Post-Execution)

- Address current issues surrounding the community particularly view shed issues and present solutions that appease not only Neebing and Thunder Bay community but also serve Horizon Inc.
- Provide the population of the area and Thunder Bay with up to date information regarding all details of construction and management

Alternatives

- Wind Power
  - Offshore
  - New location
  - Community based wind park
- Increase in Hydro

Future Solutions?

- Life Changes
  - 9000 home power generation facility will not be facilitated when the local environment provides more to the city itself.
  - Our current power consumption does not make it viable
- Local Politics and business must involve the community in large scale developments