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Wind 101

# The Wind Development Process

- **Site Selection**
- **Land Agreements**
- Wind Assessment
- **Environmental Review**
- Economic Modeling
- Interconnection Studies
- **Permitting**
- **Financing**
- **Sales Agreements**
- **Turbine Procurement**
- **Construction Contracting**
- **Operations & Maintenance**

# Site Selection

- Basic steps to select a site:
- **FATAL FLAW ANALYSIS**
- Prospecting – evidence of significant wind
- Transmission /distribution lines – distance & availability?
- Road access?
- Environmental concerns?
- Operations impact?
- Receptive community?

# Site Selection

- **Impact upon training**
- **Available space**
- **Potential interference with future expansion**
- **Proximity to suitable electrical transmission/distribution**
- **Slope and grade**
- **Minimal environmental disturbance**
- **Proximity to flooding/tornado/hurricane/seismic events**
- **View from housing**
- **Visible to visitors/passersby**

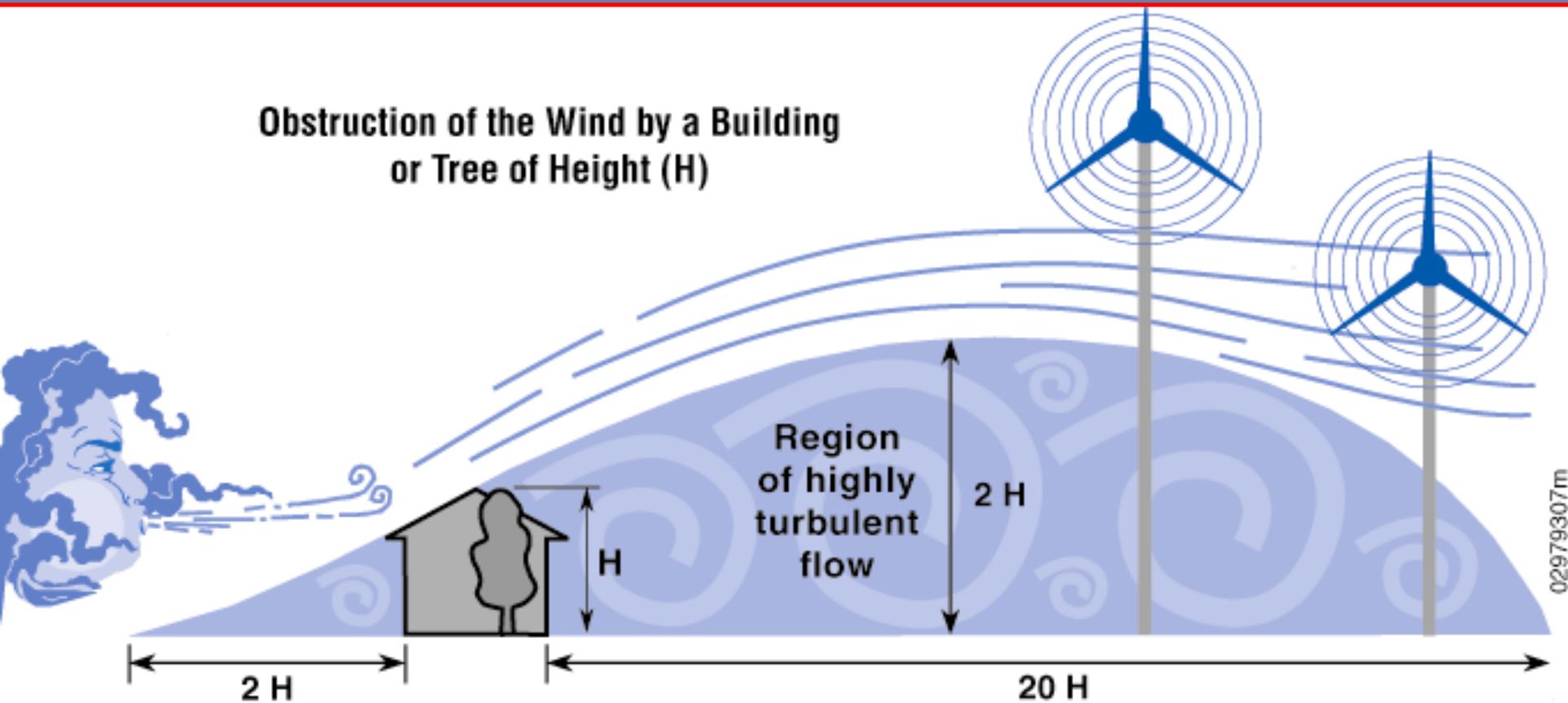
# Land Agreements:

## Identify all the interested parties for:

- Siting MET towers & wind turbines
- Operations impact – towers and turbines
- Transmission/distribution access
- Adjacent to or otherwise affected by the wind turbine or wind farm
- Investigate ownership options
  - Leasing – Enhance Use Lease or other leasing

# Micro-Siting Example: Obstruction of the Wind by a Building

Obstruction of the Wind by a Building  
or Tree of Height ( $H$ )



# Environmental Review

- Endangered species?
- Avian studies?
  - Raptors
  - Migratory birds
  - Bats
  - Other

Communicate with interested parties

- Local, state, and federal authorities
- Local Audubon society
  
- Wetlands review

# Environmental Review (cont.)

Visual studies

- Photosimulation

- Historical and archeological review

**Communicate with interested parties**

**Local, state, and federal authorities**

**Local Audubon society, Greenpeace, etc**

# Permitting

- Local, State and Federal rules/laws may apply
- FAA, DoD – airports, radar, NEXRAD
- Public land vs. private land – different issues and development costs and timelines
- Land Use Permit
- Building Permit



# Frequently Asked Questions – Wind Turbine Siting



- Setback: ~200-250m
- Noise:
  - Noise test reports on the Web:  
<http://www.nrel.gov/docs/fy04osti/34662.pdf>
- Impact on avian/bats and wildlife habitat: Proper siting is key

# Carpe Ventem



[www.windpoweringamerica.gov](http://www.windpoweringamerica.gov)

# Questions?

For more info:

<http://www.nrel.gov/wind/>

<http://www.eere.energy.gov/windandhydro/windpoweringamerica/>

<http://www.awea.org/>

<http://rredc.nrel.gov/wind/pubs/atlas/>

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