

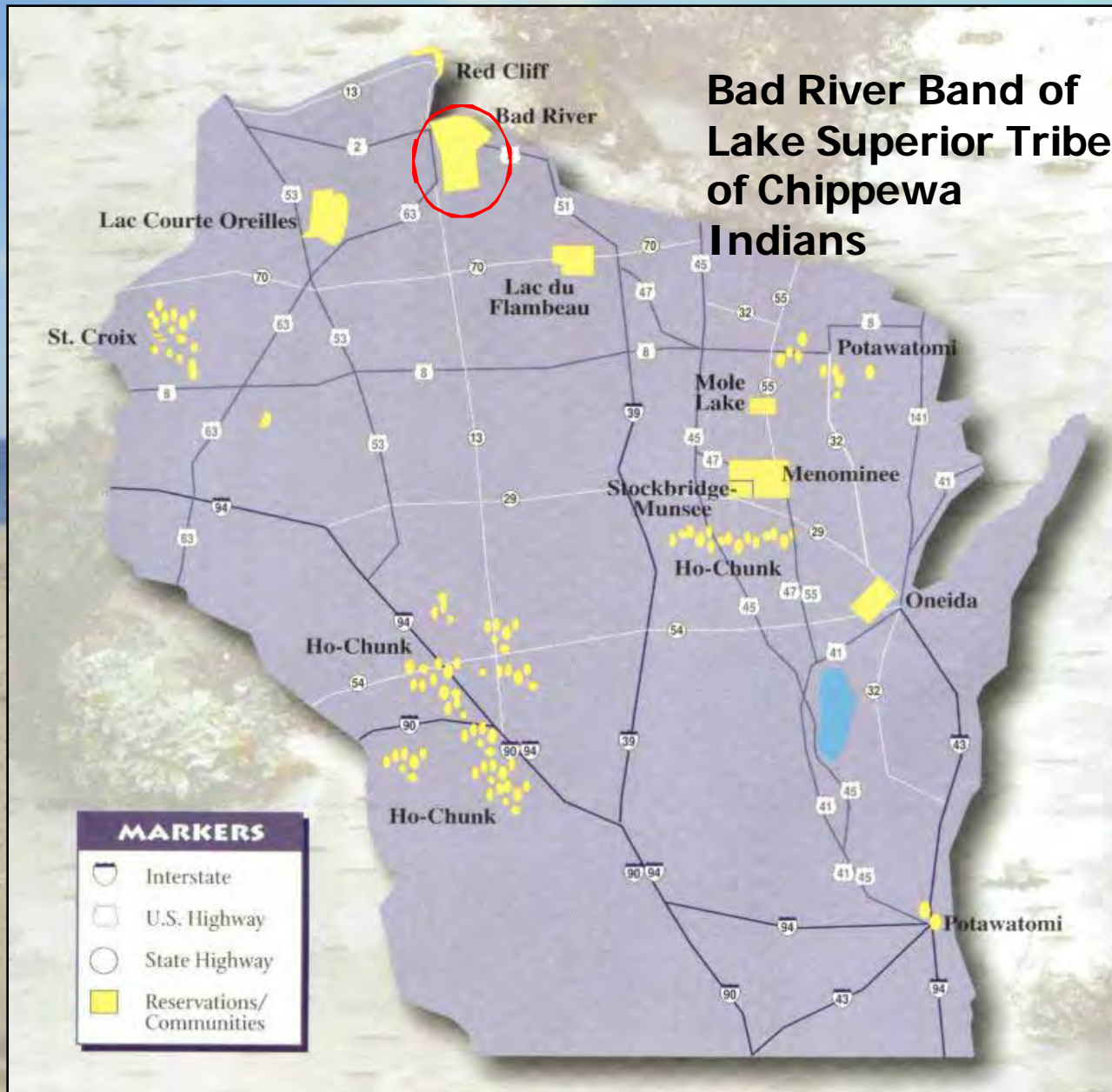


# *Making a Great Lake Superior*

**Energy Efficiency, Renewable Energy  
and Sustainability Efforts  
of the Bad River Tribe**

Monday, October 29, 2007  
Tom Wojciechowski  
CNRED Educator

# Bad River Band of Lake Superior Tribe of Chippewa Indians



# *Environmental Policy Statement*

- Looking forward Seven Generations, the Bad River Band of Lake Superior Tribe of Chippewa Indians is committed to ensuring a clean and healthy environment within the Reservation.
- Adopted August 9, 2000
- The policy identifies 8 guiding principles that support the vision statement.

# *Four Examples*

- 1) Energy and Renewable Energy Taskforce
- 2) Three Essential Community Facilities project
- 3) Burn Barrel reduction project
- 4) Gitiganing Garden project

# *(1) Energy Task Force*

- The Task force was formed by Tribal Council resolution to: “research tribal energy needs, renewable energy sources and to develop a comprehensive Tribal Energy Plan that will empower and enable the community to move toward energy independence.”



# BAD RIVER BAND OF LAKE SUPERIOR TRIBE OF CHIPPEWA INDIANS

CHIEF BLACKBIRD CENTER

P.O.Box 39 • Odanah, Wisconsin 54861

RESOLUTION NO.# 08-03-05-147

## Approving a Renewable Energy and Energy Efficiency Tribal Task Force

WHEREAS: The Bad River Band of Lake Superior Tribe of Chippewa Indians ("Band") is

**NOW, THEREFORE BE IT RESOLVED,** that the Bad River Tribal Council approves the formation of an Energy Efficiency and Renewable Energy Task Force to research tribal energy needs, renewable energy sources and to develop a comprehensive Tribal Energy Plan that will empower and enable the community to move toward energy independence.

Resolution adopted 8/03/05

- WHEREAS: New renewable energy technologies are available that could move the Tribal Community toward energy independence and the reservation holds numerous resources that could be utilized for energy production; and
- WHEREAS: Multiple sources of funding are available to assist the Tribe in planning for energy efficiency and renewable energy; and
- WHEREAS: Creating a Renewable Energy and Energy Efficiency Tribal Task Force to develop plans, policies and procedures and to conduct a comprehensive study and planning effort will lead toward sustainable energy supplies; and
- WHEREAS: The Tribal Council supports energy efficiency in all its facilities and toward increased production and use of renewable energy.

# *Bad River Wind Monitoring Project*



In 2004 & 2005 the Tribe installed four 160 foot, wind monitoring towers to collect wind data for possible commercial scale wind energy production



Each monitoring tower holds:

- \* four anemometers
- \* two wind vanes
- \* one temperature sensor

All the data is recorded by the data logger at the base of the tower.



Each tower is assembled on the ground and then raised with a winch and a gin pole.



Wind monitoring towers collect data at heights similar to a wind generator





# Wind Speed Frequency Distribution

## Site Information:

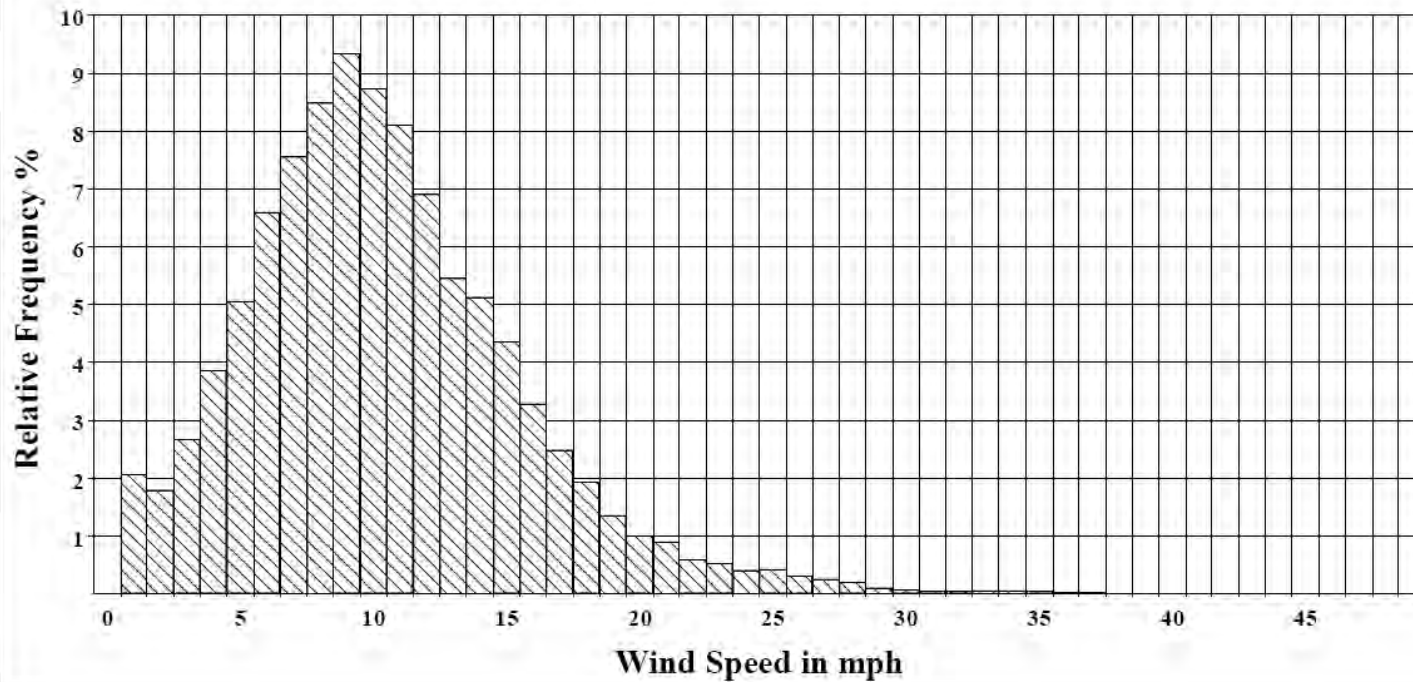
Project:  
Location:  
Elevation:

## Sensor on channel 1:

50m #40 Anem. mph  
Height: 164 ft  
Serial #: SN:19804

1/4/2005 to 4/30/2005

## Frequency Distribution





## *Benefits of Locally Owned Renewable Energy Projects*

- Provides new “Cash Crop” for Tribes and/or other Land Owners not tied to Traditional Natural Resources or Crops
- Keeps Energy Dollars in the Community
- Stimulates Economic Development in Rural Areas
- Creates Additional Jobs for Local Contractors and Tribal Members
- Provides Long Term, Low Cost, Clean, Sustainable Energy

# *Fish Hatchery Wind Turbine*



**Extension**

# *Fish Hatchery Solar Array*



# *Community Education & Energy Efficiency Tools*



## *New Task Force Initiatives*

- A comprehensive energy load assessment of the entire reservation
- A biomass assessment of tribal lands with energy in mind.
- Energy efficiency projects that will be based on data gathered in the load assessment
- Other renewable energy opportunities

# *Green Team of Early Adopters of Sustainability*





## *(2) Three Community Facilities Project Themes*

- The importance of the tribes history as a woodland people and their sense of place
- Embracing and building appropriately for our northern climate
- The sacredness of water and the need to protect the wetlands woven through the site
- Circular shapes in facilities and site development that blend with the natural surroundings
- Integration of the buildings with the natural contours and features of the site
- Recognition of cultural wisdom and preparation of means to pass that wisdom on to future generations
- Creation of the sense of belonging
- Designs that 'welcome in' the outdoors

# Site Planning



# *Green Building*

- We are applying for US Green Building Council – Leadership in Energy and Environmental Design (LEED) certification.
- Following the LEED guidelines we are evaluating the buildings' environmental impacts in the following 5 categories:
  - Energy Efficiency
  - Indoor Environmental Quality
  - Sustainable Sites
  - Water Efficiency
  - Materials & Resources

Yes ? No

14 1 2

## Energy & Atmosphere

17 Points

Discipline(s)

Y			Prereq 1	<b>Fundamental Building Systems Commissioning</b>	Mech/Elec
Y			Prereq 2	<b>Minimum Energy Performance</b>	Mech/E/A
Y			Prereq 3	<b>CFC Reduction in HVAC&amp;R Equipment</b>	Mech.
Y			Credit 1.1	<b>Optimize Energy Performance, 15% New / 5% Existing</b> (Increase by 5% increments for 1 pt. each level up to 60%/50%) <b>***Energy Performance Target: 60% New (10 points)***</b>	Mech Elec. Arch.
Y			Credit 2.1	<b>Renewable Energy, 5%</b>	Mech/E/A
		N	Credit 2.2	<b>Renewable Energy, 10%</b>	Mech/E/A
		N	Credit 2.3	<b>Renewable Energy, 20%</b>	Mech/E/A
Y			Credit 3	<b>Additional Commissioning</b>	Mech/Elec
Y			Credit 4	<b>Ozone Depletion</b>	Mech.
Y			Credit 5	<b>Measurement &amp; Verification</b>	Mech/Elec
	?		Credit 6	<b>Green Power</b>	Owner



*(3) Efforts to Reduce Burn Barrels  
On The Bad River Reservation*

“Working Towards a Burn Free Community”



Participants Received Free Pick Up Of Their Burn Barrel



Participants also received disposal of the contents of their burn barrel.



**Participant Signing “Burn Free Home” Pledge While Air Quality Specialist Holds Incentive Bag With Promotional Items**

**Extension**



Forty Four Burn Barrels Were Collected During The Buy-Back Program, Resulting In A 25% Reduction Of The Total Barrels On Reservation.

## *(4) The Gitiganing Garden Restoration Project*



### Background

Historically the Ojibwe people received a significant portion of their annual food supply from large raised-bed vegetable gardens, as well as hunting game and gathering wild roots, berries, and fruit.



The name for the earliest settlement in Bad River is called “Gitiganing”, or “the place of the gardens”.

# *Gitiganing Grows!*



In just eight years, The Gitiganing Garden Restoration Project has grown from a small beautification project into over 80 residential gardens and 9 community gardens. It grows bigger every day!

# *Community Gardens*



**Community Field:** 1.5 Acres full of community plots, market gardens, two large Three Sisters gardens, and two large sunflower spirals!

# *Community Gardens*

## Daycare Garden:

A youth garden shared with the daycare, full of cucumbers, tomatoes, veggies, and sunflowers.



## Headstart Garden:

A youth garden for the summer feeding program and Headstart kids full of pumpkins, corn, and sunflowers.



## *Passing on the Legacy*



Traditionally, every decision or action was done with the awareness of how it would impact the next seven generations. Our project has this in mind.

- The most important thing is to lead our children to make healthy decisions. The Gitiganing Garden Restoration Project focuses on improving the diet, the education, and the overall lifestyle to enable the children to create a healthy lifestyle.

# *Future Generations*



## *Seven Generations*

- This presentation has described just a few of the ongoing projects of the Bad River Community. Many members of the community are working to make a difference for the future generations, both within the reservation and throughout the Chequamegon Bay Region.
- If you would like additional information please feel free to contact me.

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