RED MOUNTAIN
TRIBAL ENERGY

Winnebago Tribe of Nebraska

Wind Energy Feasibility Project Update

November 18, 2008

Discussion Outline

- Winnebago Tribe of Nebraska
- Project Objectives and Overview
- Project Location
- Project Participants
- Project Status
  - Accomplishments
  - Lessons Learned
- Next Steps

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Winnebago Tribe of Nebraska

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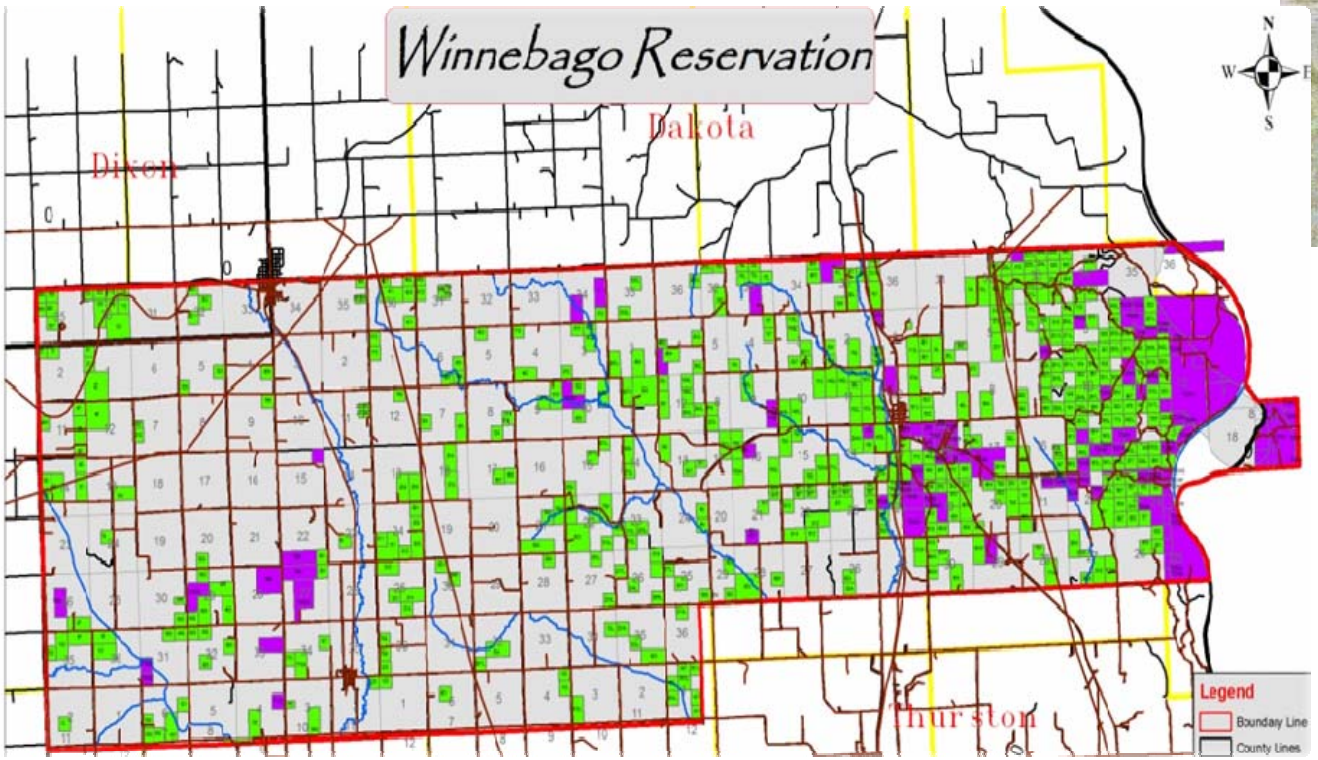

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DOE Wind Project: Purpose

- To initiate a study to determine feasibility of potential wind development on the Winnebago Reservation
  - To study and analyze wind resources
  - To analyze and make preliminary recommendations on where it is feasible and not feasible to continue investigation or pre-development activities
  - To provide the Winnebago community information to determine whether wind development is of further interest
  - To provide tools needed to pursue potential wind project development

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DOE Wind Project: Overview

- Review potential of facility scale and other potential wind project(s):
  - Facility-scale project (WinnaVegas Casino)
  - Community-scale project (evaluate potential Thunderway study site)
  - Large-scale project (Identify potential Western Winnebago study site)

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Winnebago Project Team

- Winnebago Council
- Winnebago Energy Committee
- Red Mountain Tribal Energy

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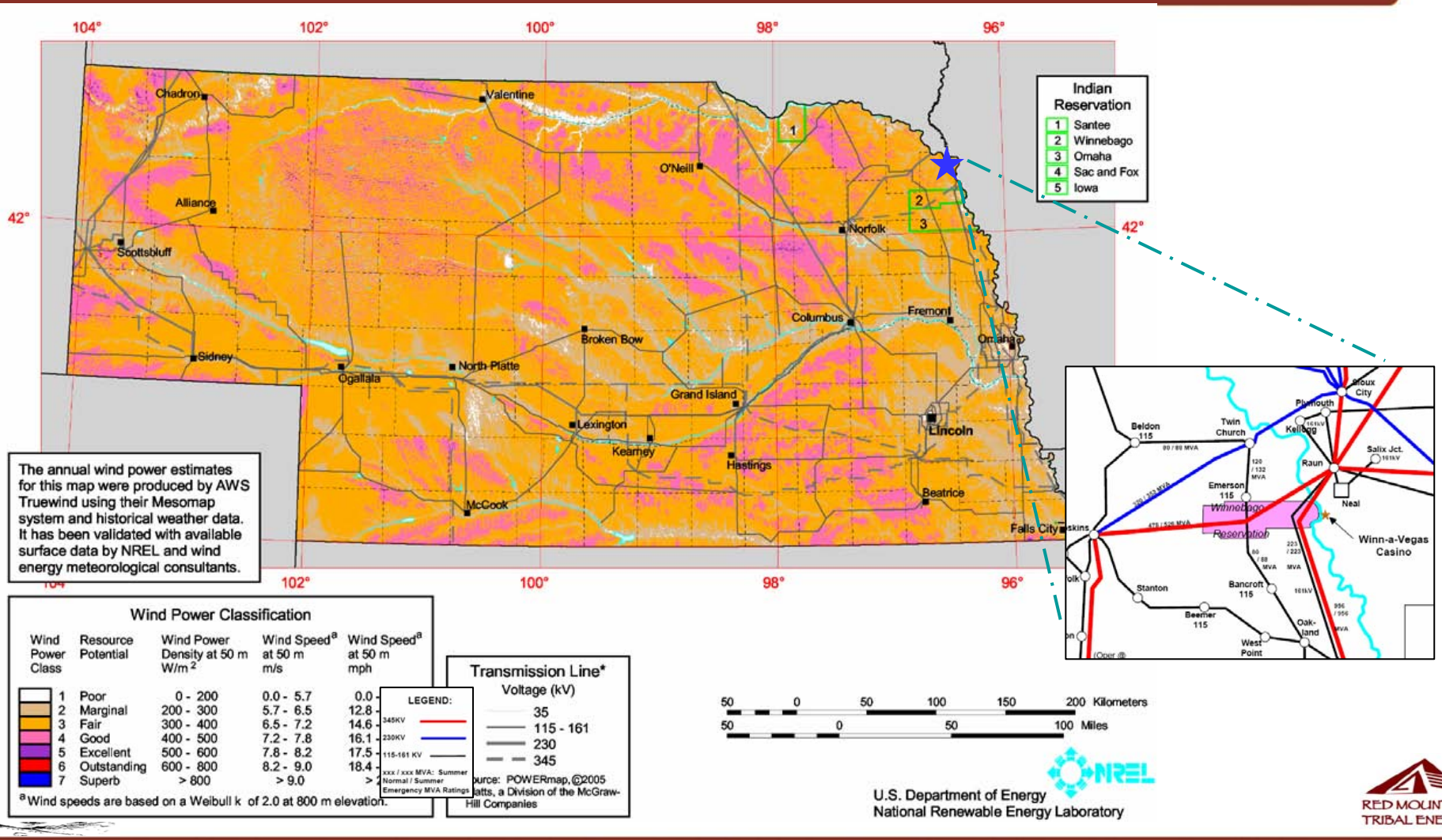
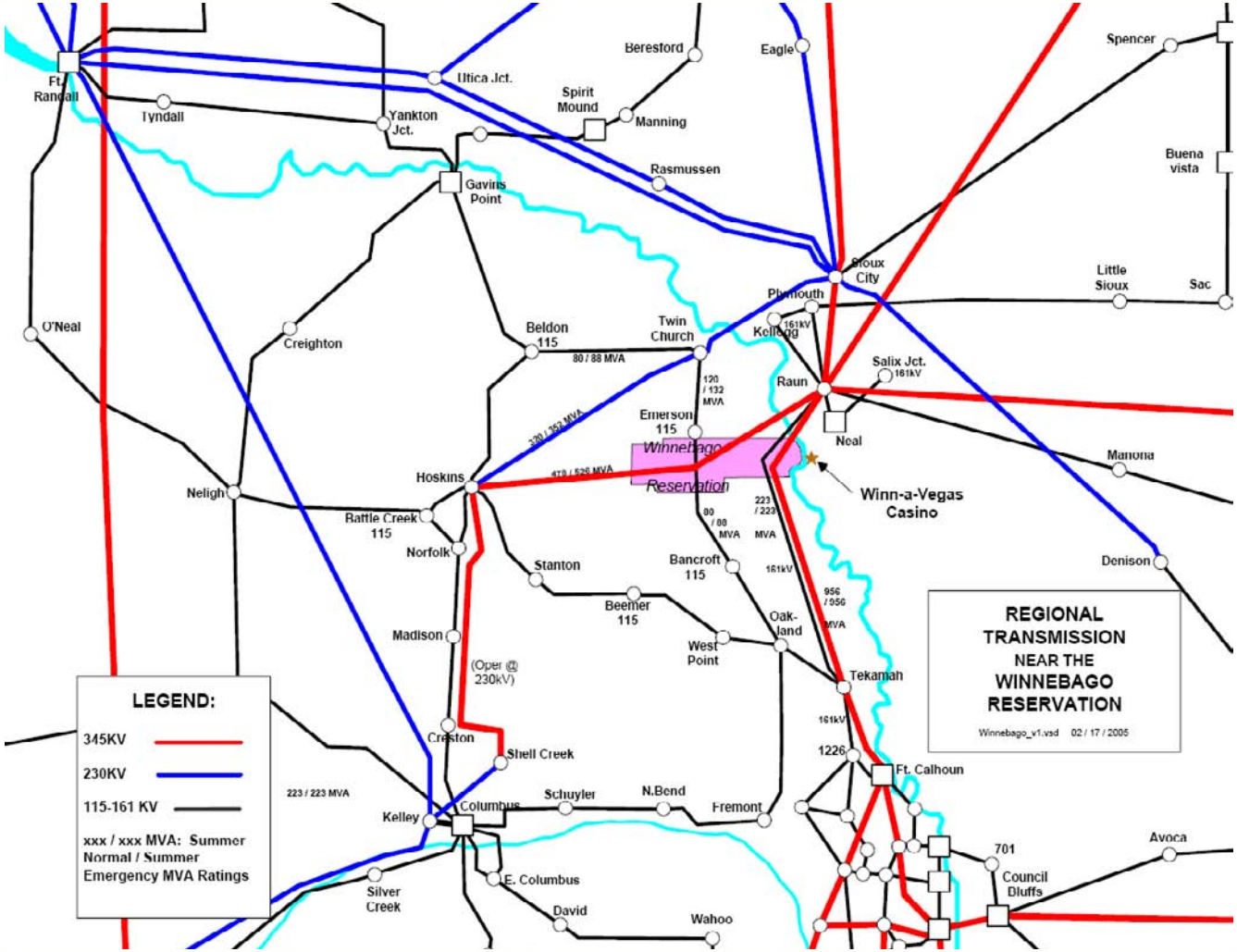
Winnebago: Wind Resource Indications



Winnebago: Transmission Access



WinnaVegas – Facility Scale Wind Project

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WinnaVegas: Analysis/Overview

- Meteorological tower installed since late 2006
- Wind speed estimations:
  - Average Wind Speed: 13.6 – 14.3 mph
  - Wind Class 2+/3-
- Analysis:
  - Matched wind resource to turbines; project costs
  - Estimated electric use on site; performed energy audit
  - Created comparisons:
    - ✓ To impact on WinnaVegas of using wind power + backup power from Woodbury
    - ✓ To power rate if purchased by Iowa utility (NIPCO)

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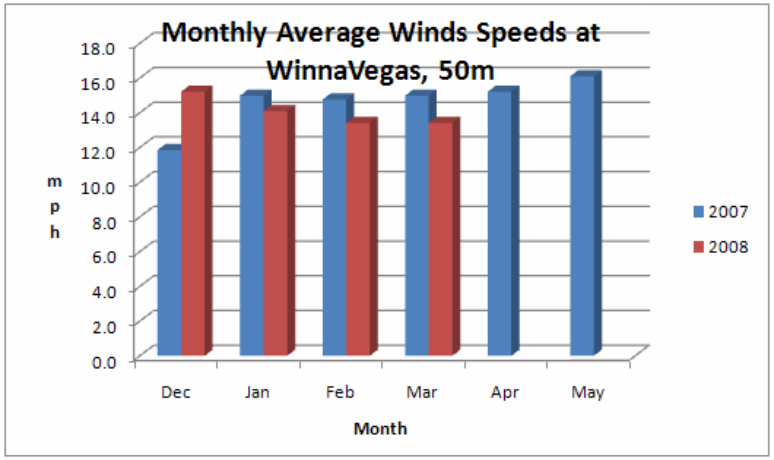
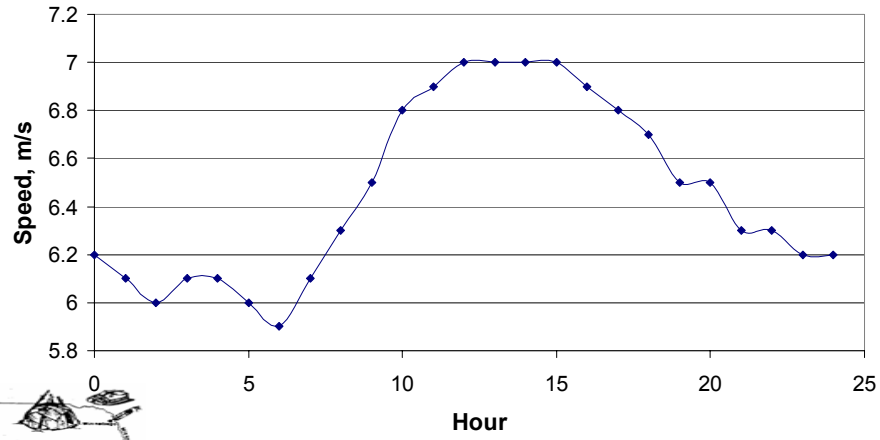
WinnaVegas: Wind Data

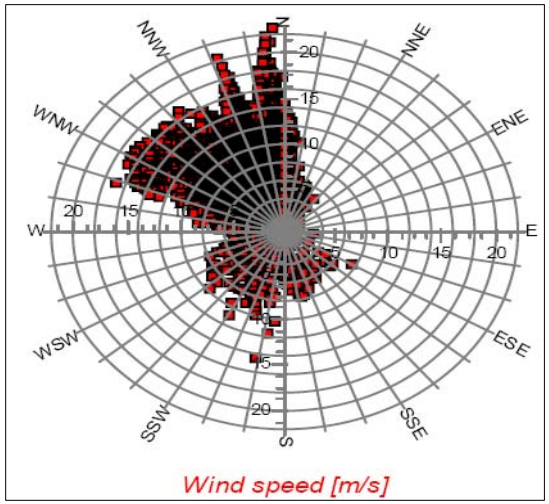


- Significant challenges with data collection equipment have resulted limited availability of valid wind data

Hourly Wind Data



Directional Wind Speed



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WinnaVegas: Estimated Wind Turbine Costs

Description	650 kW	750 kW
Energy Equipment	1,111,800	1,224,000
Development	82,000	82,000
Engineering	190,000	190,000
Balance of Plant	425,000	425,000
Miscellaneous	122,952	130,795
Initial Costs - Total	$ 1,931,752	$ 2,051,795

Zero Debt Cost: (0%: CREBS financing) Levelized Cost of Energy - $.095/kWh)

Low Debt Cost (3%: USDA Financing) Leveled Cost of Energy - $0.107/kWh

Moderate Debt Cost (6% Financing) Levelized Cost of Energy - $0.120/kWh

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WinnaVegas: Wind Project Power Sales Options

- Two wind power sales options:
  - Sell all power generated to Northwest Iowa Power Cooperative (NIPCO) for **$0.044/kWh**
  - Utilize power from turbine at the Casino, plus purchase backup power from Woodbury REC
- Woodbury REC does not offer net metering (ability to utilize power from the wind turbine to offset electric usage, or “running the meter backward”)

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WinnaVegas: Power Sales Comparisons

Sell power to WinnaVegas:

Cost of wind power ($.095 - $.12 per kWh) is $144,118

+

Cost of backup power (Demand Charges + Energy Charges + Customer Charges) $371,431/3,188,164 kWh ($.1165 per kWh) is $371,431

= $515,549 or $.1096 per kWh

In 2007, WinnaVegas paid $274,535 for 4,705,200 kWh ($.0583 per kWh)

Sell power to NIPCO:

NIPCO willing to pay only avoided cost rate of $.044 per kWh

Cost to generate wind power is $.095 - $.12 per kWh

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WinnaVegas: Preliminary Conclusions

- WinnaVegas Wind Project does not appear to make economic sense at this time
- WinneVegas project would only make economic sense if:
  - Substantial grant funding were available for energy equipment ($1M+)
  - and
  - Either Woodbury backup power rates were lower
  - Or NIPCO was willing to pay more for wind power

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Thunderway – Community Scale Wind Project

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Thunderway Hill: Analysis/Overview

- Wind monitoring sites evaluated
- Preliminary siting reviews initiated
- Potential project size estimated
- Estimating wind turbine costs
- Calculating levelized cost of power

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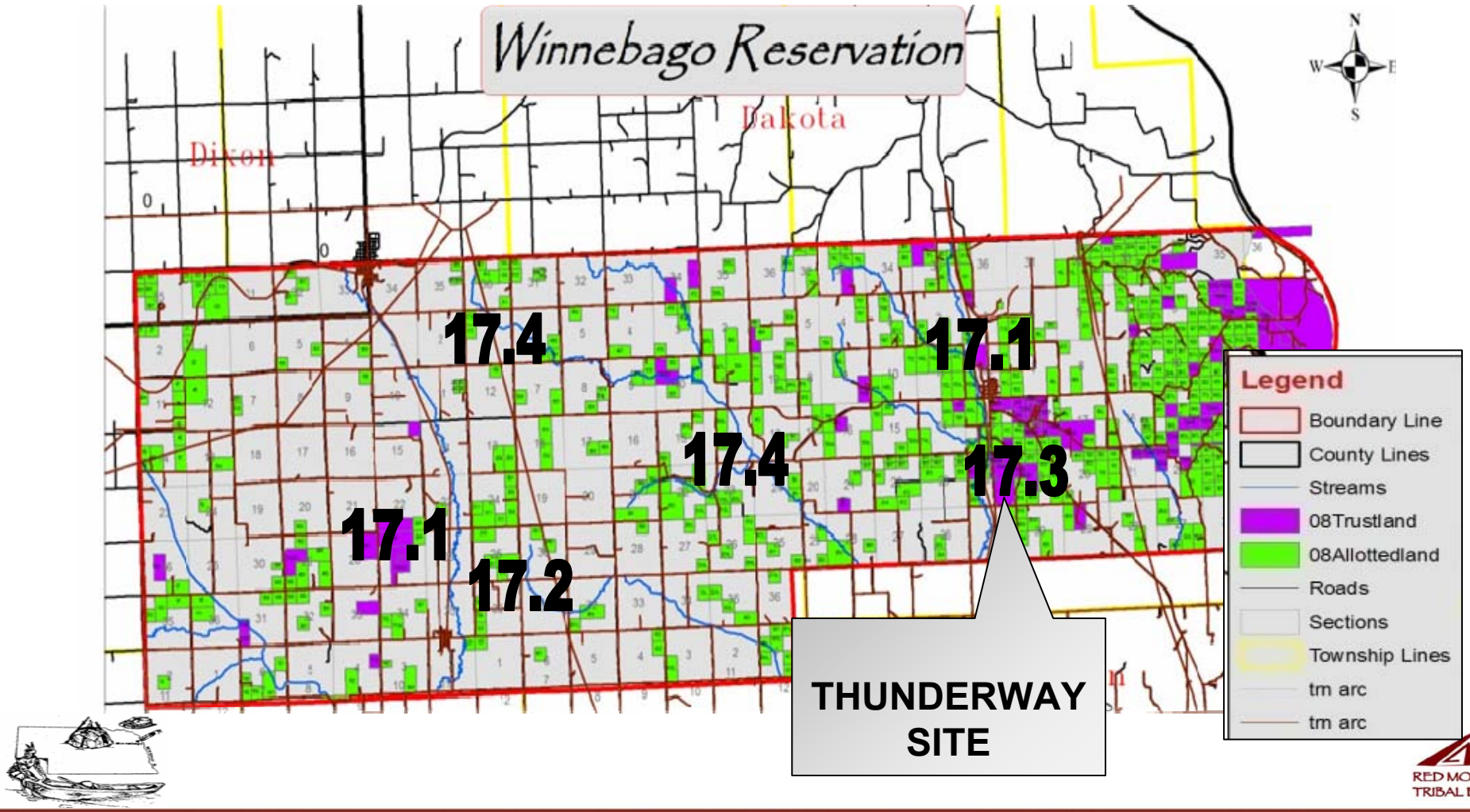
Thunderway: Wind Speed Estimate at 80 meters



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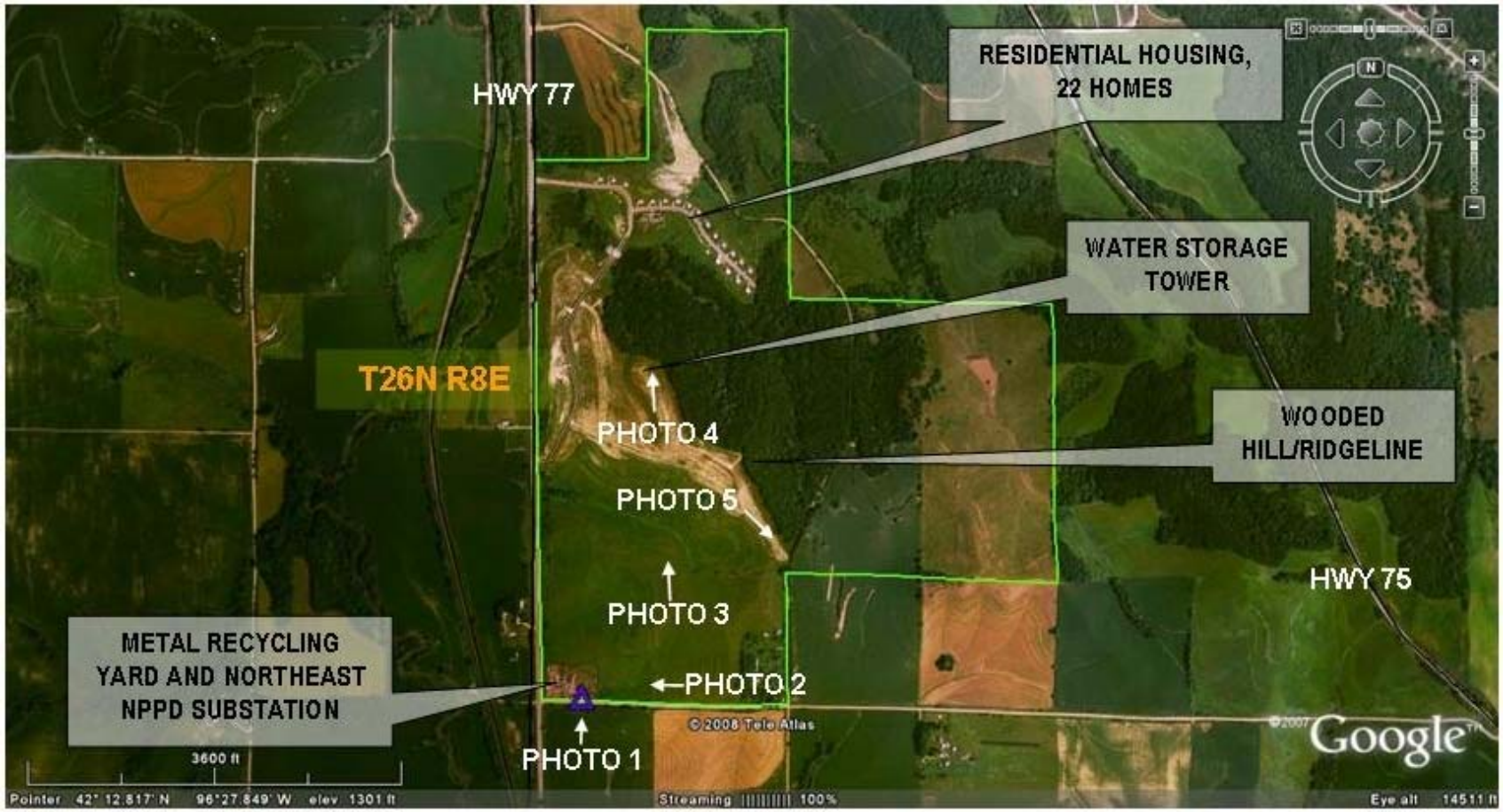
Thunderway: General Area



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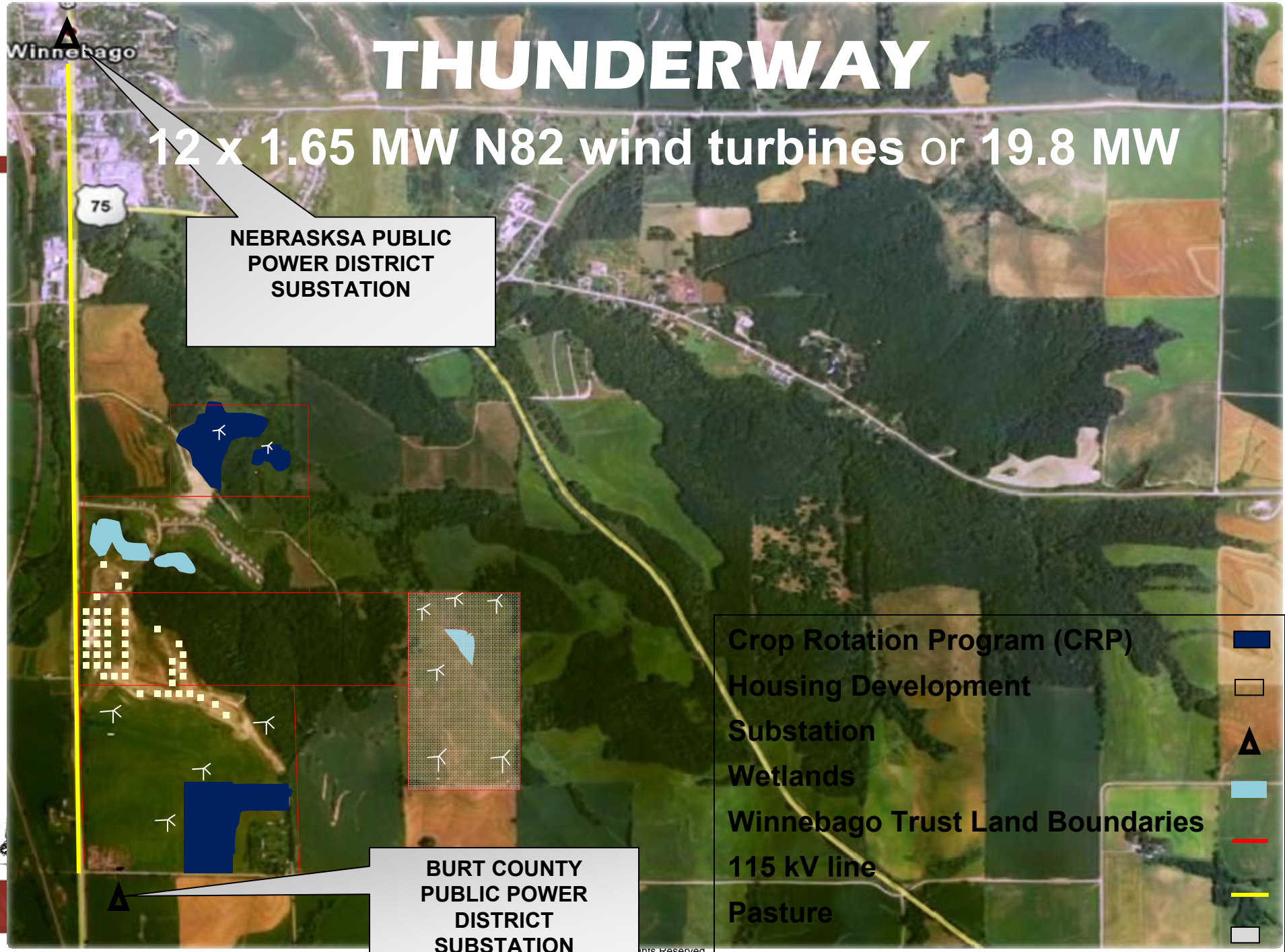
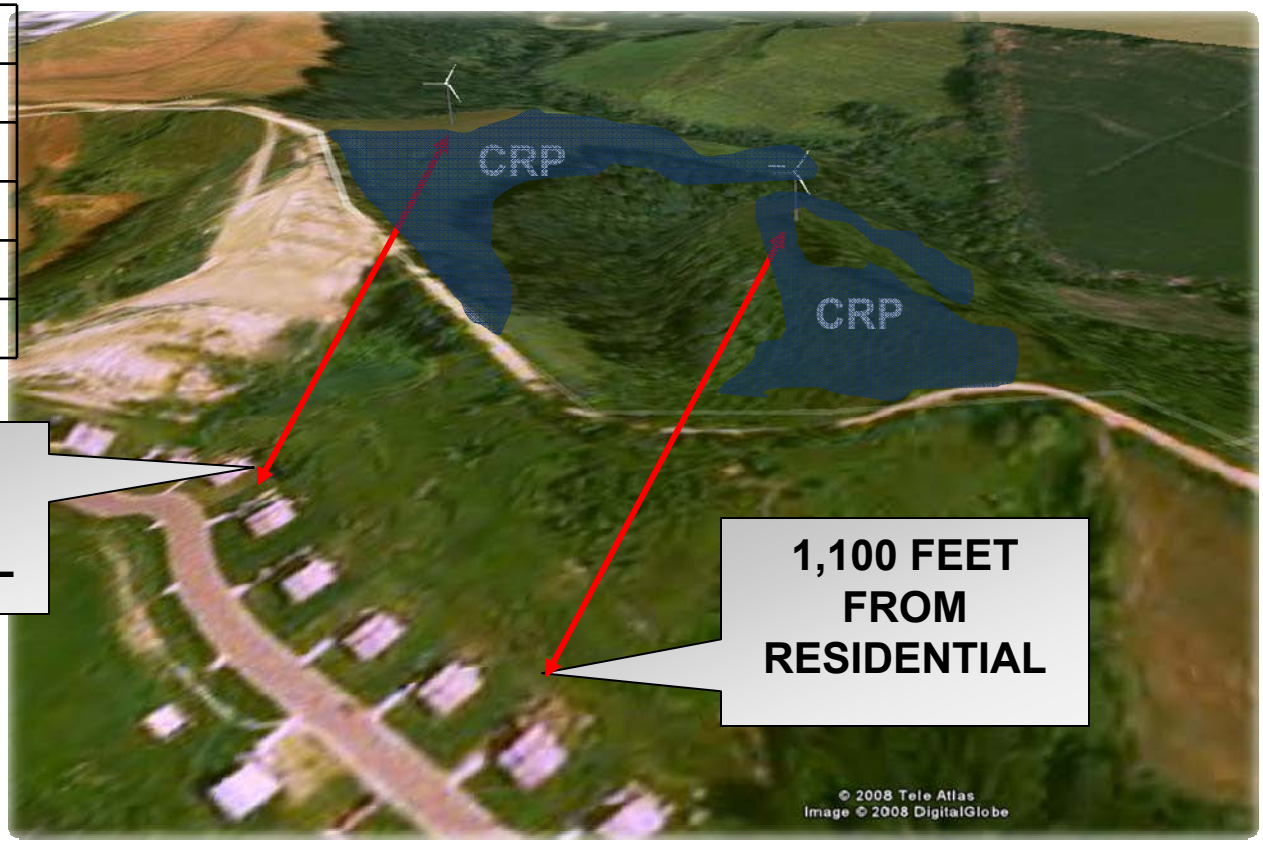

THUNDERWAY
12 x 1.65 MW N82 wind turbines or 19.8 MW
Winnebago
75
NEBRASKSA PUBLIC POWER DISTRICT SUBSTATION
BURT COUNTY PUBLIC POWER DISTRICT SUBSTATION
Crop Rotation Program (CRP)
Housing Development
Substation
Wetlands
Winnebago Trust Land Boundaries
115 kV line
Pasture

Thunderway: Required Setbacks

Setbacks	ft
Homes	750
Property lines	290
Road Rights of Way	265
Certain Wetlands	600
Conservation Land	600



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Thunderway: Pre-Siting Summary

- Substantial trust land will be available for wind development after CRP and pasture commitments expire
- Burt County substation is on site
- Site is visible to Winnebago residents
- Preliminary site review indicated there are no archeological sites

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Thunderway: Potential Energy Production

Site Description	Project Size MW	Average Wind Speed @ 80 m, mph	Average Total Annual Energy kWh
Thunderway Hill	19.8	17.3	54,075,813

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Western Winnebago – Large-Scale Wind Project

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Western Winnebago: Analysis/Overview

- Wind monitoring sites evaluated
- Preliminary siting reviews initiated
- Potential project size estimated
- Estimating wind turbine costs
- Calculating levelized cost of power

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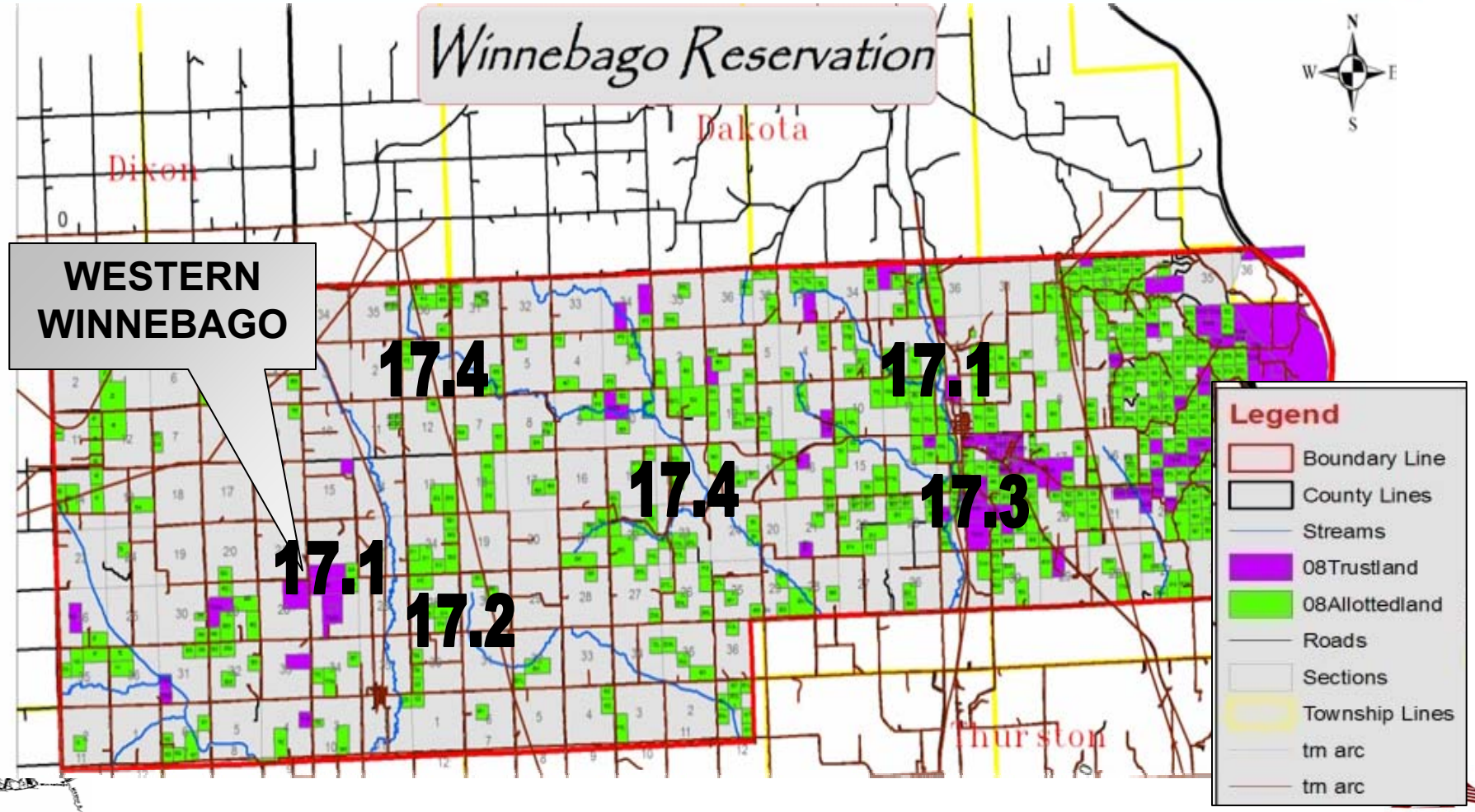
Western Winnebago: Wind Speed Estimate at 80 meters



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Western Winnebago: NPPD Met Tower Opportunity

- NPPD is actively promoting large wind project development in its service territory for future NPPD power purchases
- NPPD not investing in potential projects; primary interest is to encourage wind development by providing access to data; potentially purchase energy output from wind farms developed
- NPPD approached Winnebago in spring 2008 to determine its possible interest in siting a met tower on Winnebago lands
- NPPD will install the tower/analyze data at no charge, if power from project is sold to NPPD; if Winnebago Tribe developed wind project and sold power to another utility, NPPD would seek compensation for tower and data analysis

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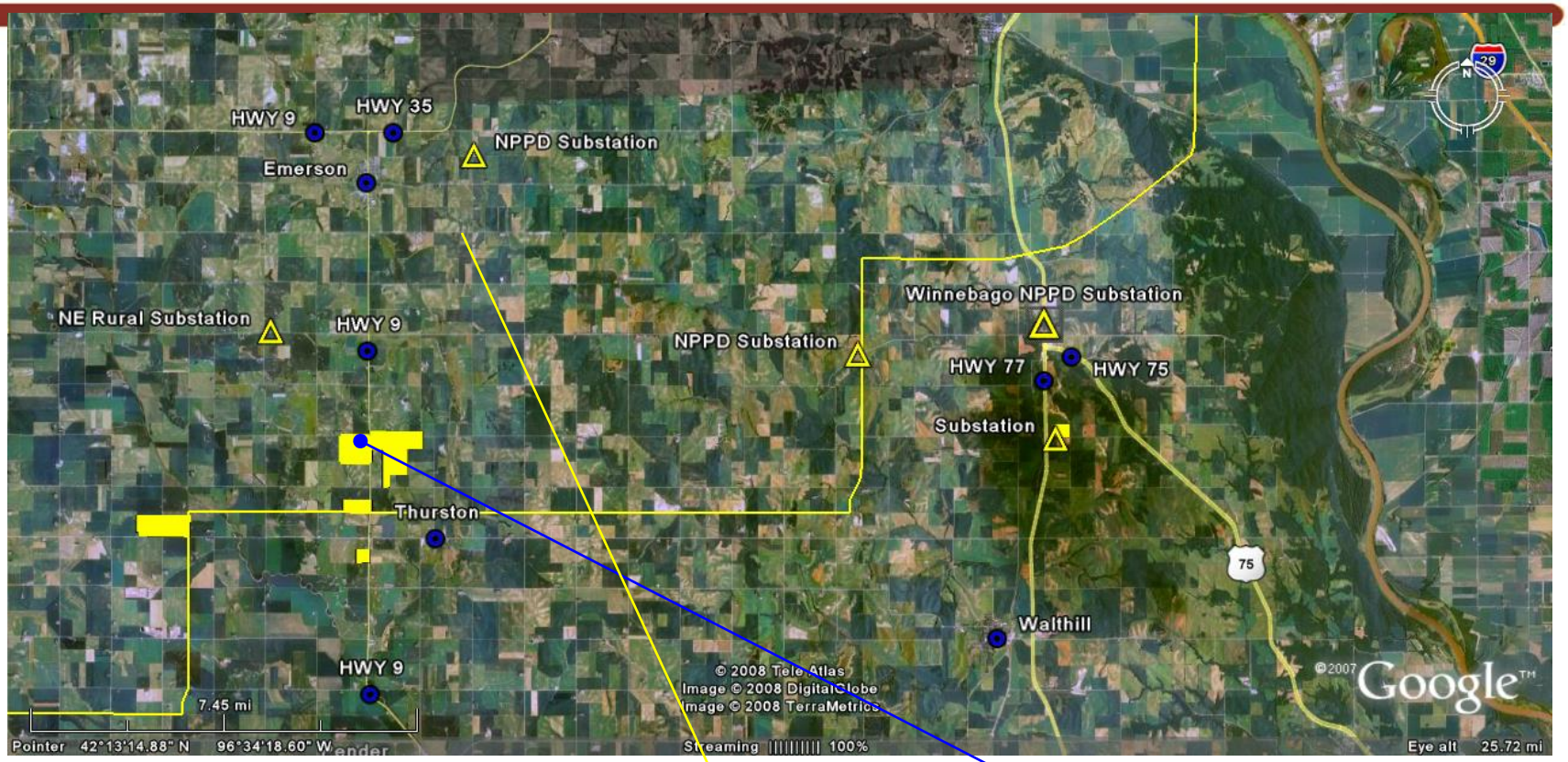
Western Winnebago: NPPD Met Tower Site Overview Map



MAP SYMBOL/COLOR KEY	
POTENTIAL MET TOWER SITE	NPPD TRANSMISSION LINE

Optimal Met Tower Site Location

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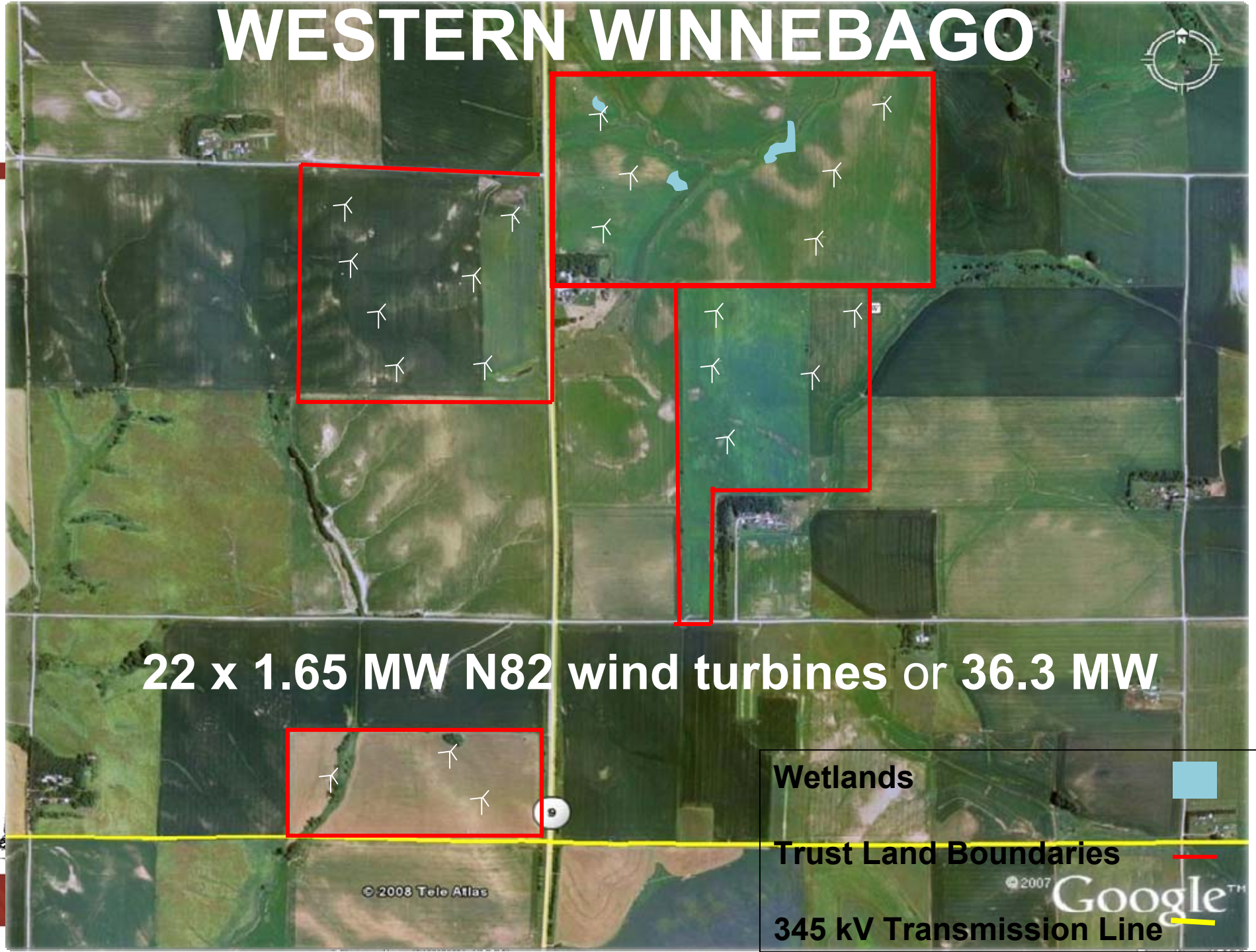
WESTERN WINNEBAGO



Western Winnebago: Potential Energy Production

Site Description	Project Size MW	Average Wind Speed @ 80 m, mph	Average Total Annual Energy kWh
Western Winnebago	36.3	17.1	99,138,991

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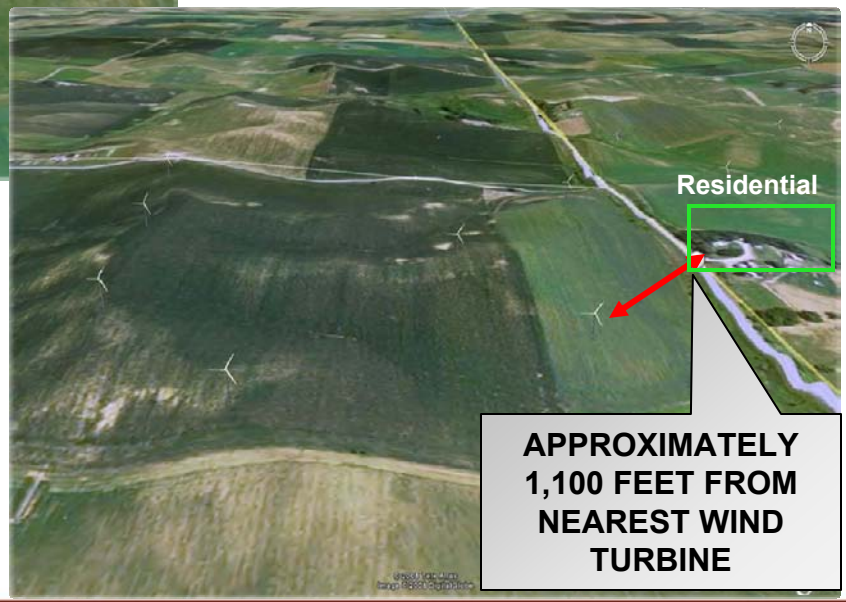
Western Winnebago: Required Setbacks

Setbacks	ft
Homes	750
Property lines	290
Road Rights of Way	265
Certain Wetlands	600
Conservation Land	600



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Western Winnebago: Preliminary Conclusions

- Western Winnebago wind project could make economic sense if wind monitoring results meet anticipated levels, and equipment costs remain reasonably stable
- Western Winnebago wind project could be even more economical if additional lands were available

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Winnebago: Lessons Learned

- Consider all project options available
- Pursue assistance from potential partners
- Don’t assume local utility programs will support renewables
- Community support is vital
- Persevere

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Winnebago: Next Steps

- Continue met tower siting studies
- Hold community meetings re: wind development
- Pursue development partner opportunities

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