

# Wind Energy Siting Process & Wildlife

## The Unseen Filter: USFWS Land-based Wind Energy Guidelines Tiers I & II

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## KEY TAKEAWAYS

### **Tiers I & II of the Wind Energy Guidelines**

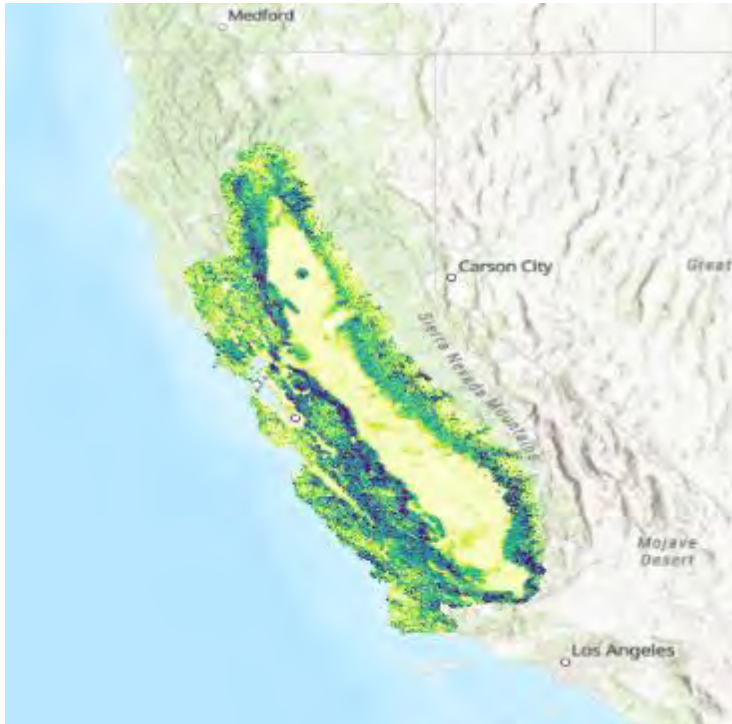
- The WEGs are entrenched in development processes

### **Project Site Selection (GIS is key!!)**

- Key wildlife factors and data sources
- Key non-wildlife factors and data sources

### **Tiers I & II are more sophisticated than might appear**

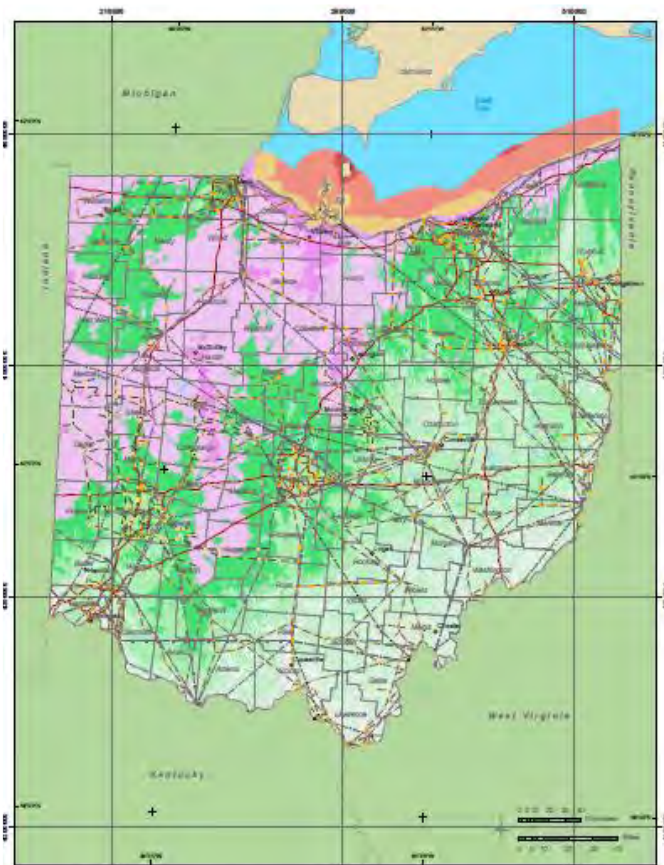
- Much of Tier I (and some Tier II) might occur without face-to-face coordination
- There is a built-in incentive to coordinate
- In Tier II, state and federal coordination is more common, much has already happened!



Source: Western Golden Eagle Team

## WILDLIFE FILTERS

- Species of concern or their habitat
- Species of birds and bats of particular collision risk
- Known areas of congregation
- Potential for significant adverse impacts to species
- Large areas of intact habitat (fragmentation concern)
- Plant communities of concern

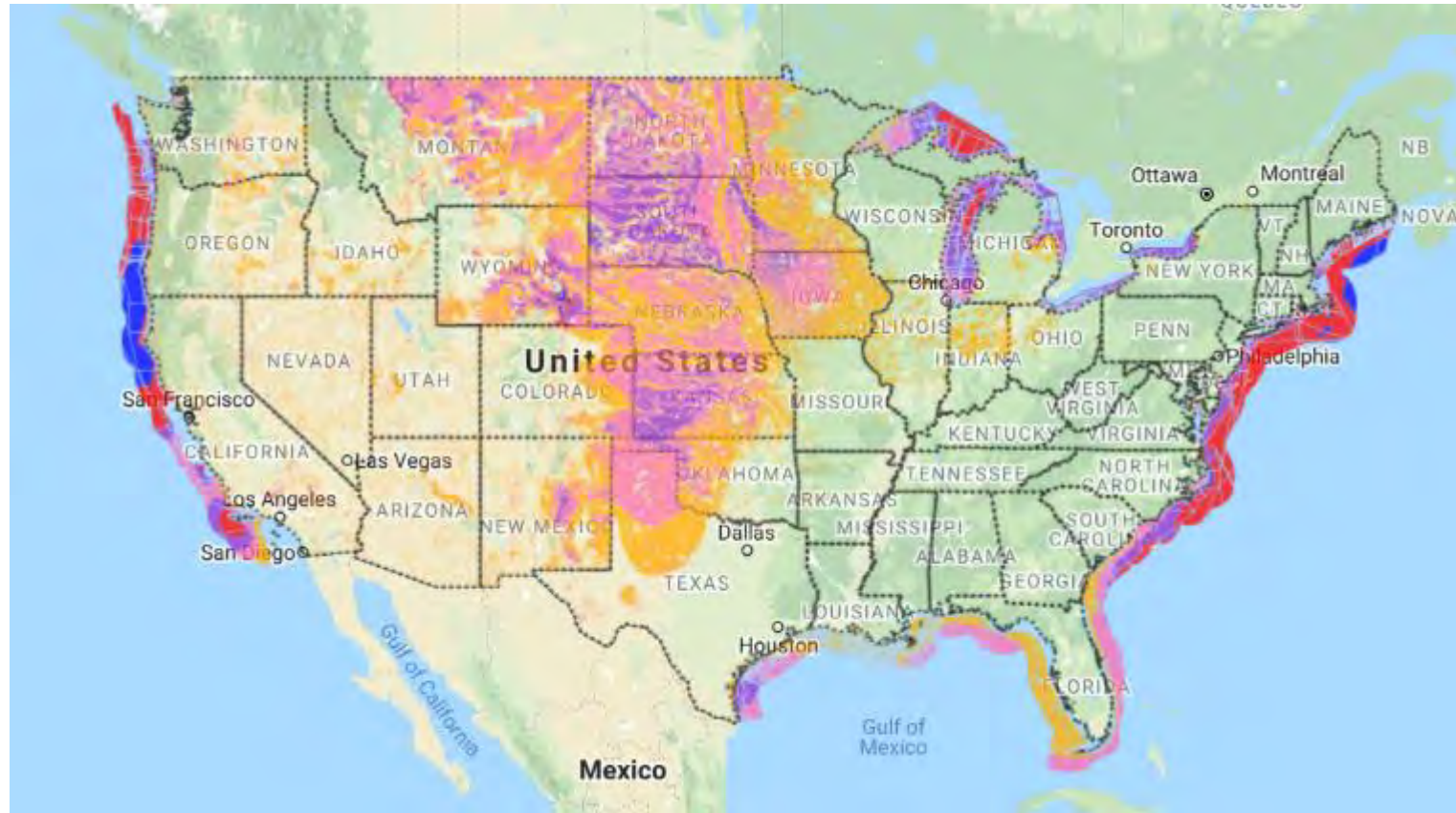


Wind Resource of Ohio Mean Annual Wind Speed at 100 Meters

## NON-WILDLIFE FILTERS

- Adequate wind resource
- Presence of bulk transmission system
- Land ownership and parcel size
- Site accessibility (adequate road quality and dimensions)
- Population density
- Local/state ordinance considerations
- Compatible land use
  - Economic use (farming, commercial, residential, recreational, etc.)
  - Ecological resources (habitat, wetlands, species)
  - Cultural resources

## EXAMPLE PROJECT: ID Areas - Market, Policy, Wind (Macro)

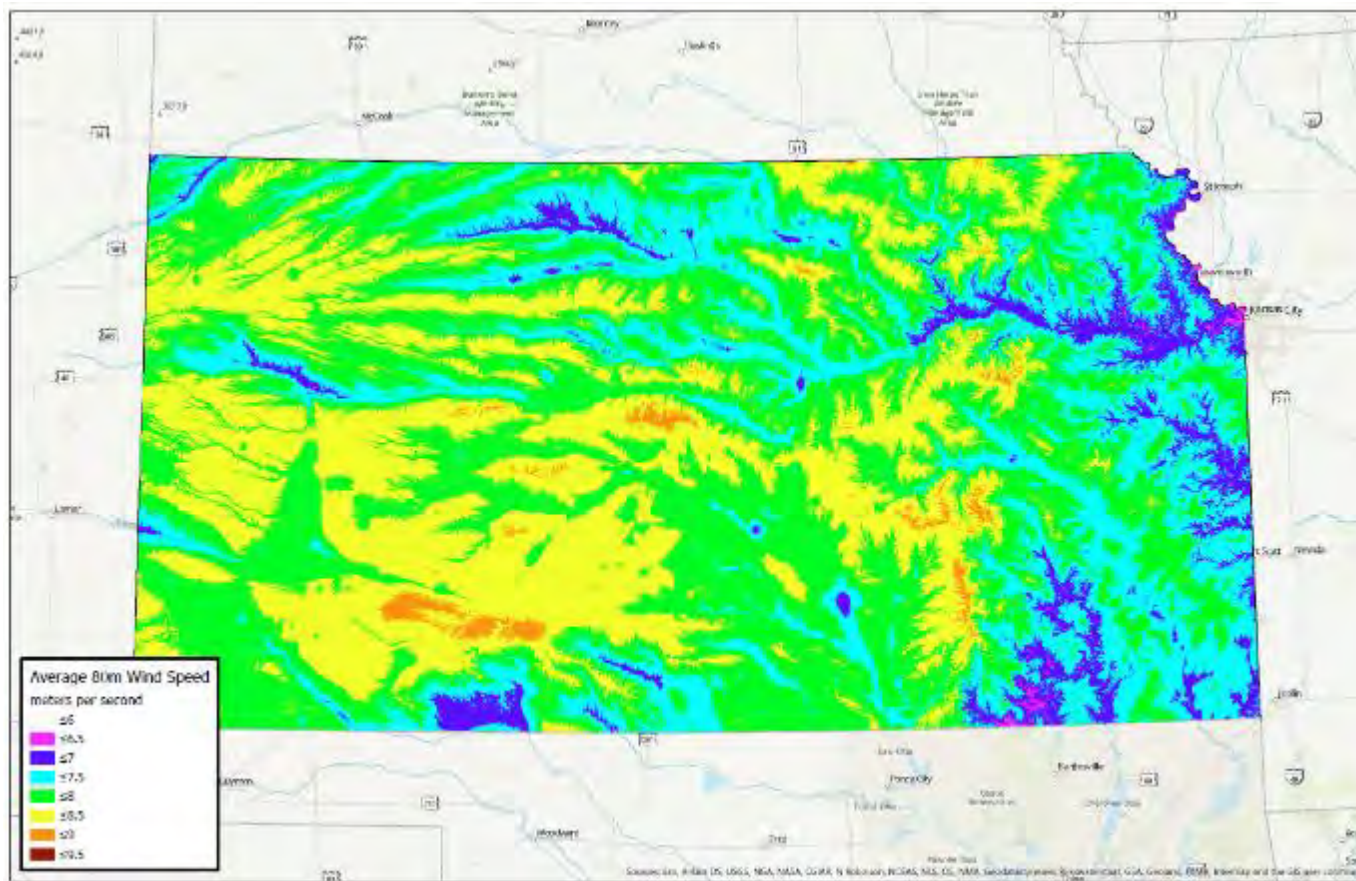


Source: NREL Wind Prospector

## WIND FARM PROSPECTING

Target = Eastern Kansas

- Area allows for PPA opportunities for Kansas City load zone.
- Western KS has transmission issues that would require significant upgrades (\$\$\$) and would result in significant electrical loss.
- State mandated moratorium on wind development in the Flint Hills.





## DATA SOURCES FOR WILDLIFE CONSIDERATIONS

- State Natural Heritage Databases
  - State environmental review tools (where available)
- WAFWA's Crucial Habitat Assessment Tool (CHAT)
- Audubon's Important Bird Areas (IBAs)
- TNC's Priority Conservation Areas & Site Wind Right
- USGS Gap Analysis Database (GAP)
  - Conservation lands
  - Protected Areas Database
- USGS National Land Cover Database
- USFWS Environmental Conservation Online System Information for Planning and Consultation (IPaC) tool
- USFWS National Wetlands Inventory



## DATA SOURCES FOR NON-WILDLIFE CONSIDERATIONS

- NREL Wind Power Class map
- USGS Gap Analysis Database (GAP)
  - Geographic boundaries
  - Public and Private land ownership
- Transmission maps
- FEMA Flood Map Service Center
- FCC Database search – Radyn Microwave License search
- DoD constraints
  - Military Training Routes
  - Special use airspace
  - Radar
- FAA
  - Airports, flight patterns
  - Radar
- ESRI
  - Oil and gas and other industrial development
  - Slope and terrain
  - Other
- Setback considerations
  - Roads, parcels, homes, pipelines and distribution lines, surface waters/wetlands, wildlife (see next), homes/receptors, microwave and communications paths, etc.



## PROSPECTING CONSIDERATIONS

### Wind Resource

- 8 mps and higher is ideal
- Existing transmission
  - Proximity & availability
- Complimentary land use
  - Target agricultural areas

### Federal & State Lands

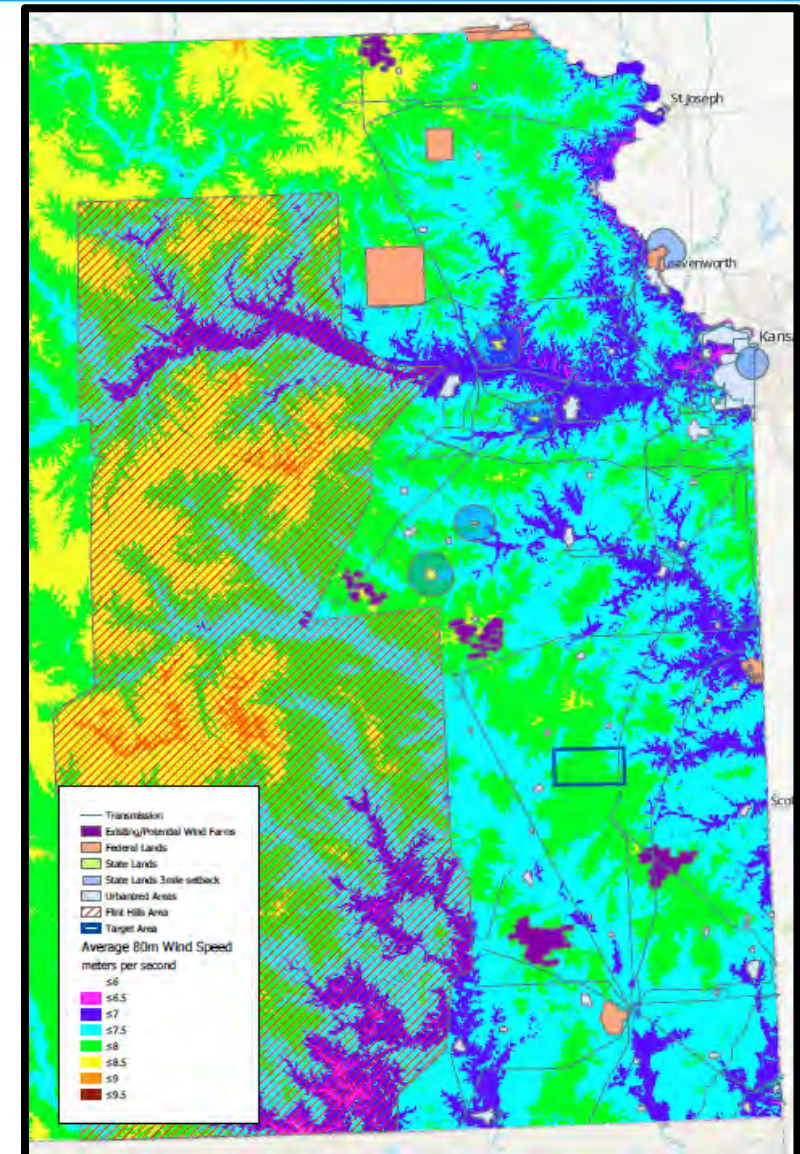
- Kansas has 3-mile buffer around state managed lands for wind development

### Wildlife

- IPaC review for federal species
- Breeding range of bald eagles
- Consult KDWPT page for species of concern

### Military bases and training grounds

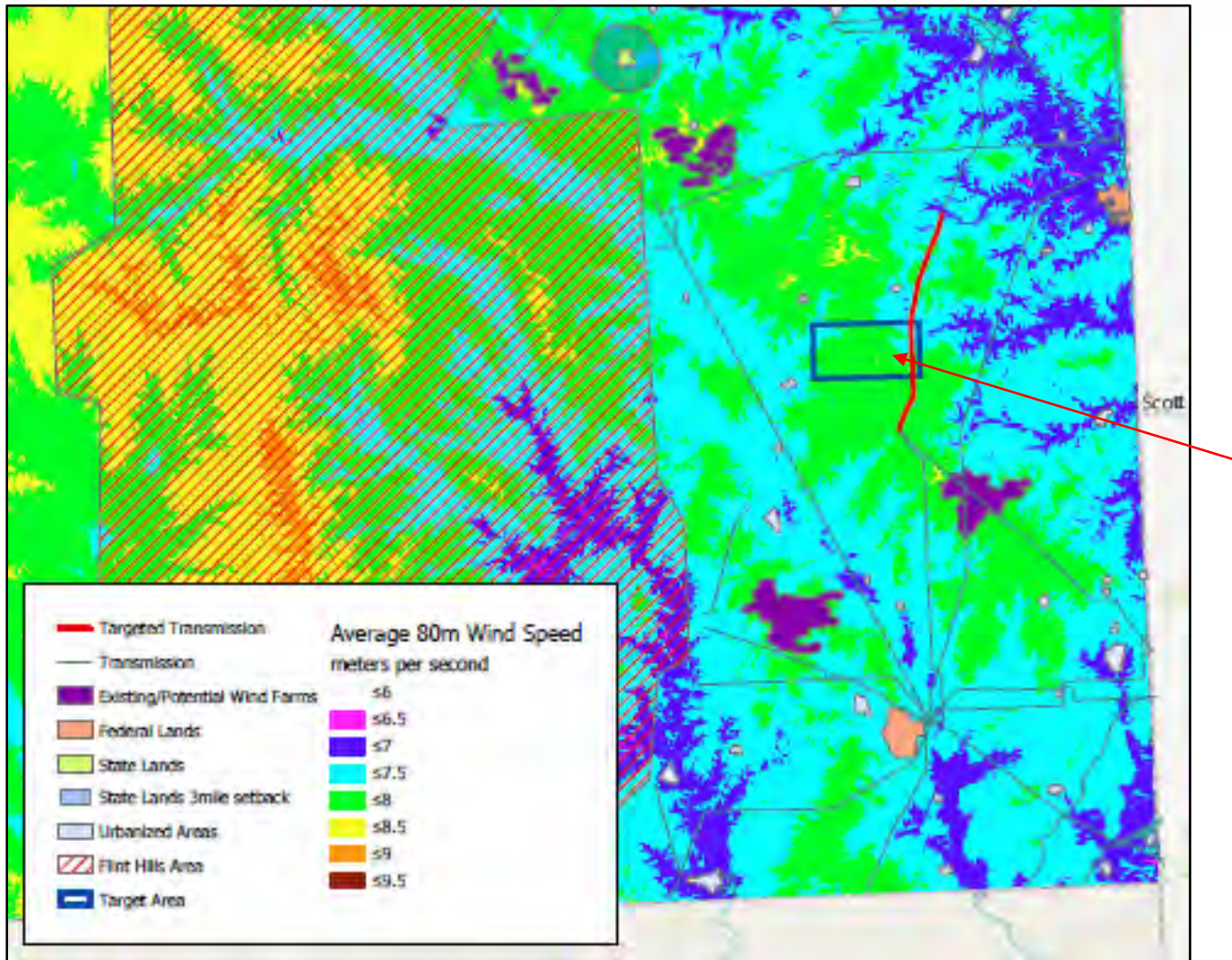
- Difficulty in getting DoD approval for facilities that are within radar zones and training paths





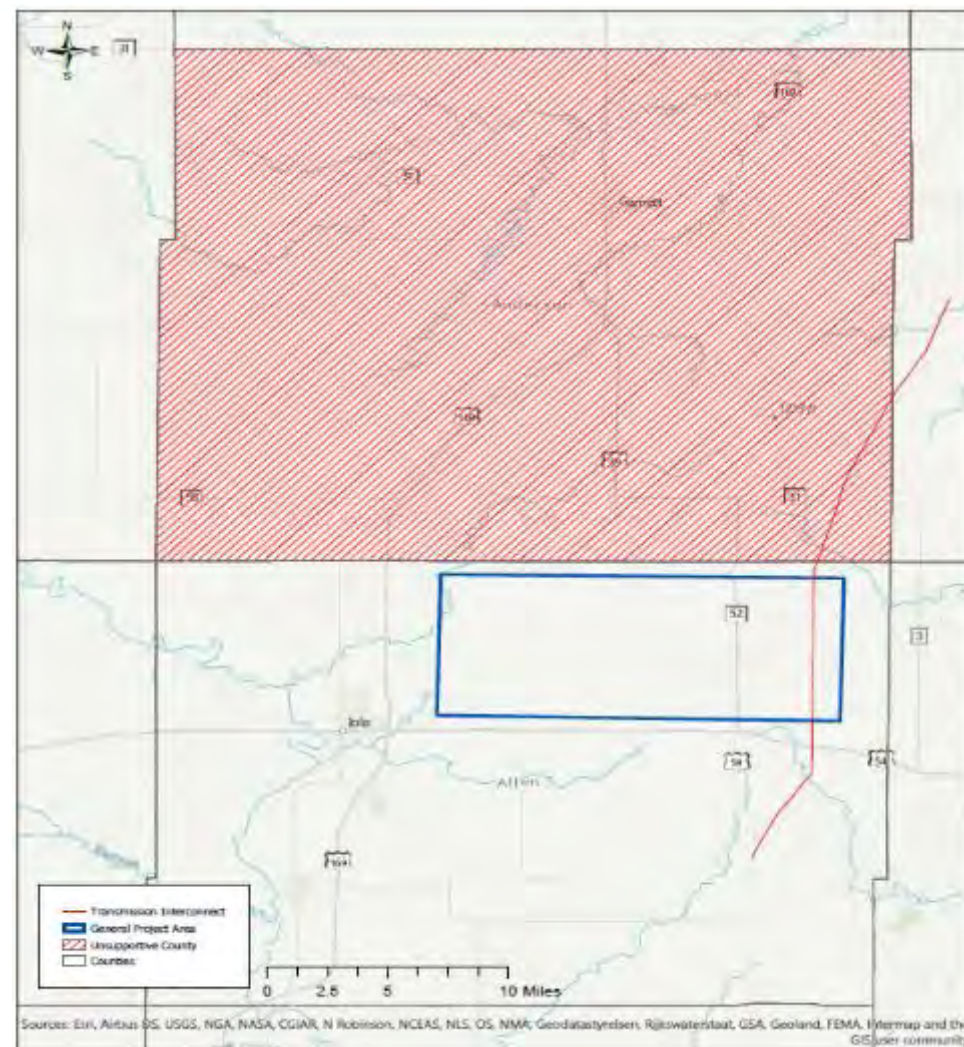
## PROSPECTING

- Focus on SE Kansas where wind speeds average 8mps.
- Identified transmission lines with enough capacity to host facility
- Evaluated land use to pinpoint agricultural areas without much tree cover (avoiding nesting raptors) or riparian corridors (avoiding bat concentration areas).

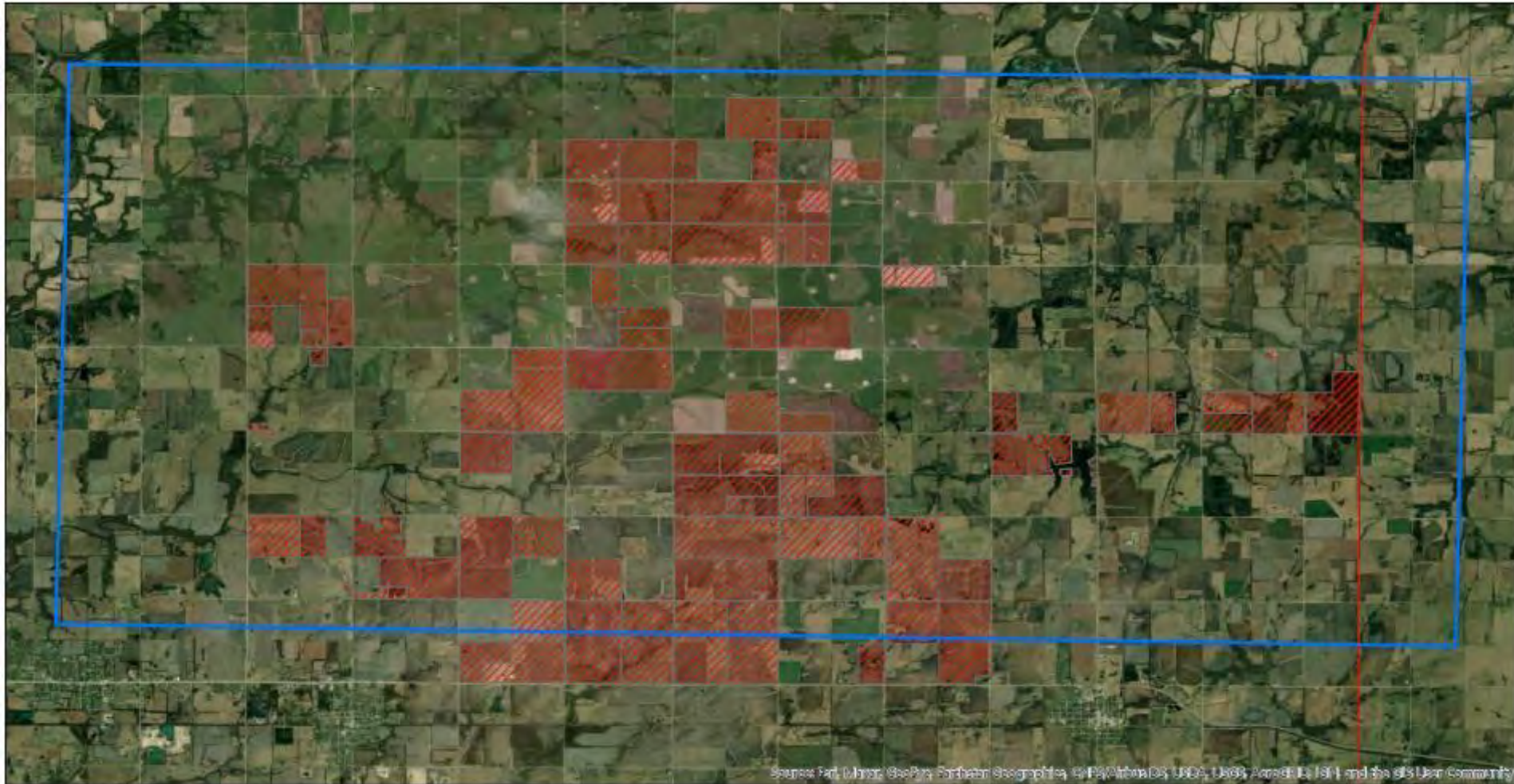


## NARROWING THINGS DOWN

- Goal to keep project within single county
  - More than one county can lead to different requirements and agreements with the counties
  - Northern county not supportive of wind development
  - Southern county was supportive with both landowners and county government
- General Project Study Area was established
  - Aim for 100ac per MW. 200MW = ~20,000ac
  - Blue box is 24,105 acres
- Agency coordination at this time (generally)



## DETERMINE LANDOWNER INTEREST



## ESTABLISH PROJECT BOUNDARY

