

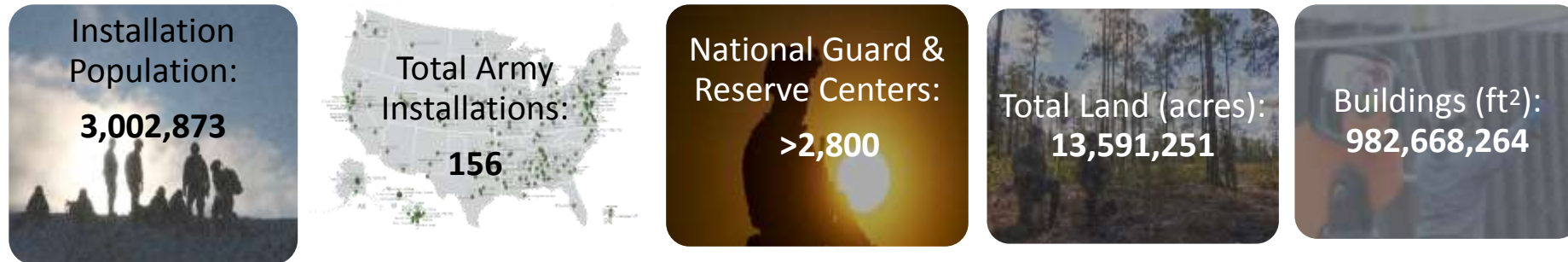
# **National Conference of State Legislatures**

Renewable Energy, the Military, and How States are  
Contributing to Success

**11 October 2019**

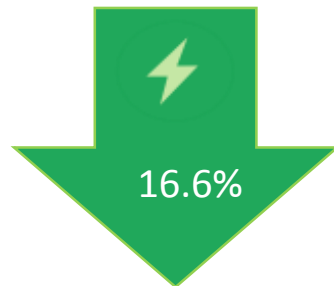
**Mr. Stanley L. Rasmussen**

Department of Defense, Regional Environmental Coordinator



## Army Installation Energy & Water Consumption Costs

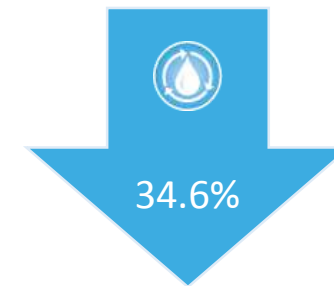
Energy Use Intensity  
since FY03



\$1.1B Energy 75.5T  
BTUs/year

\$86.9M Potable Water  
31.2B GALs/year

Water Use Intensity  
since FY07



The Office of Energy Initiatives was established by the Secretary of the Army as a task force in 2011, then as a permanent office in 2014

- Serves as central program management office for Army's development, implementation and oversight of **large-scale renewable and alternative energy projects** that leverage private financing
- Secures Army installations with energy that is **resilient, affordable and sustainable**
- Focused on creating an **"islandable" capability** – energy security projects that include onsite generation, storage, and controls



**Fort Hood, Texas:** 65 MW AC Hybrid Wind & Solar Projects; Expected to provide \$100 million in cost avoidance over the term of the 30-year contract



**Redstone Arsenal, Alabama:** 10 megawatt (MW) alternating current solar project with Army's first privately funded, commercially available battery storage solution



**Schofield Barracks, Hawaii:** 50 MW Biofuel/Multi-fuel Project operational since May 2018. Full "Islandable" energy capability expected for Schofield Barracks, Camp Kunia and Wheeler Army Airfield



**The 50-megawatt power plant can provide 100 percent of the power needed to keep Schofield Barracks, Wheeler Army Airfield and Field Station Kunia running during a grid power emergency.**





**Fort Benning**



**Fort Stewart**



**Fort Gordon**

## 5 MW Solar Array



(Photo by Megan Locke Simpson)

## 825kW (3 Turbines)



**Provides 5% of  
installation's power.**





**21,824 panels, producing 5.5MW of power  
and at least 60% of installation's power.**



**4.1MW Ground Array**



**365kW Solar Carport**





**White Sands Missile Range  
4.1MW Solar Array**



## Potential Issue 1 -- Radar Interference

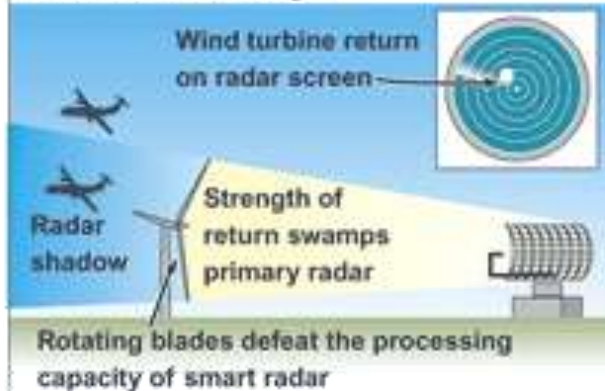




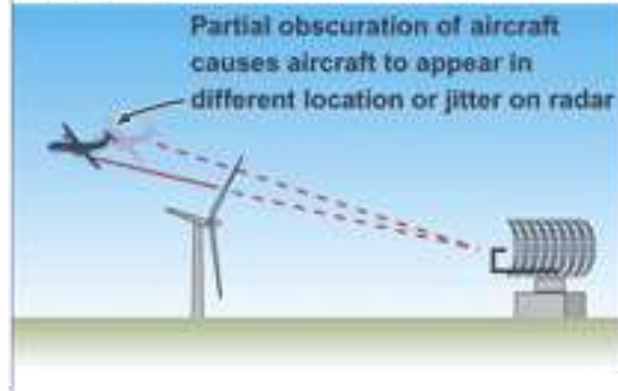
**Type 101 Mobile Air Defense Radar**

## EFFECTS OF WIND TURBINES ON RADAR SURVEILLANCE

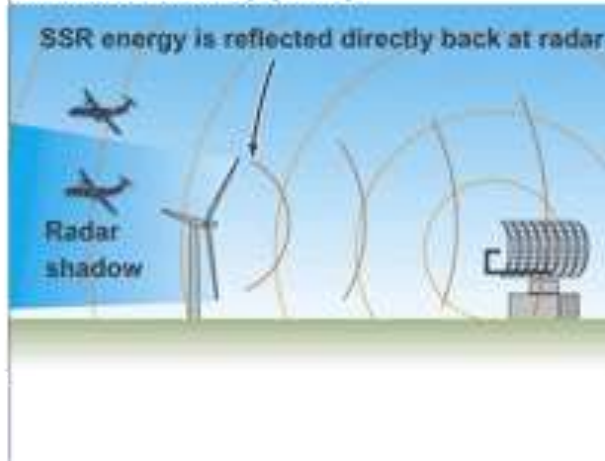
### Obstruction of target



### Diffraction



### SSR reflection (uplink)



### SSR reflection (downlink)





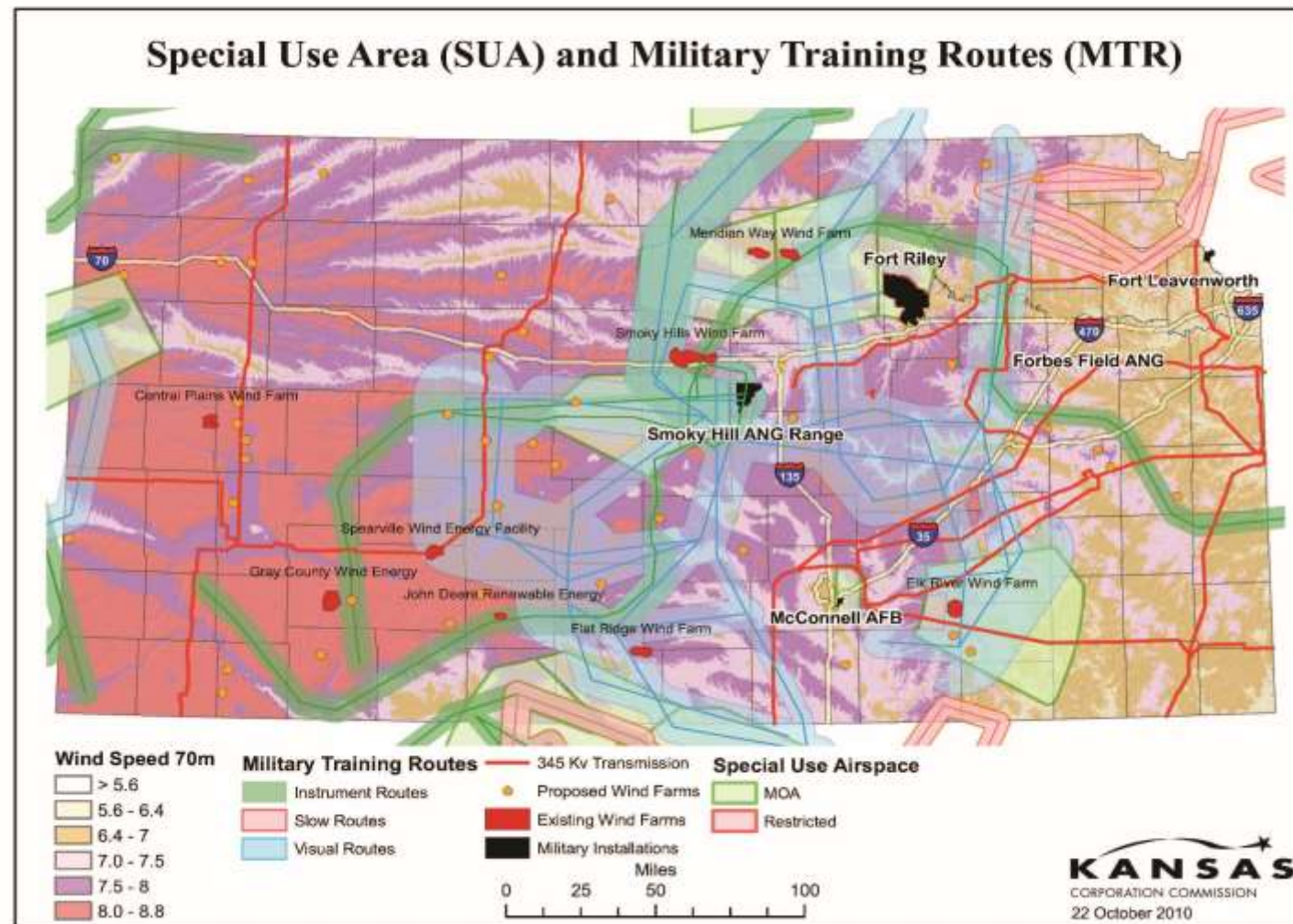
## **2006 DoD Report to Congress The Effect of Wind Farms on Military Readiness**





## Potential Issue 2 – Airspace Interference

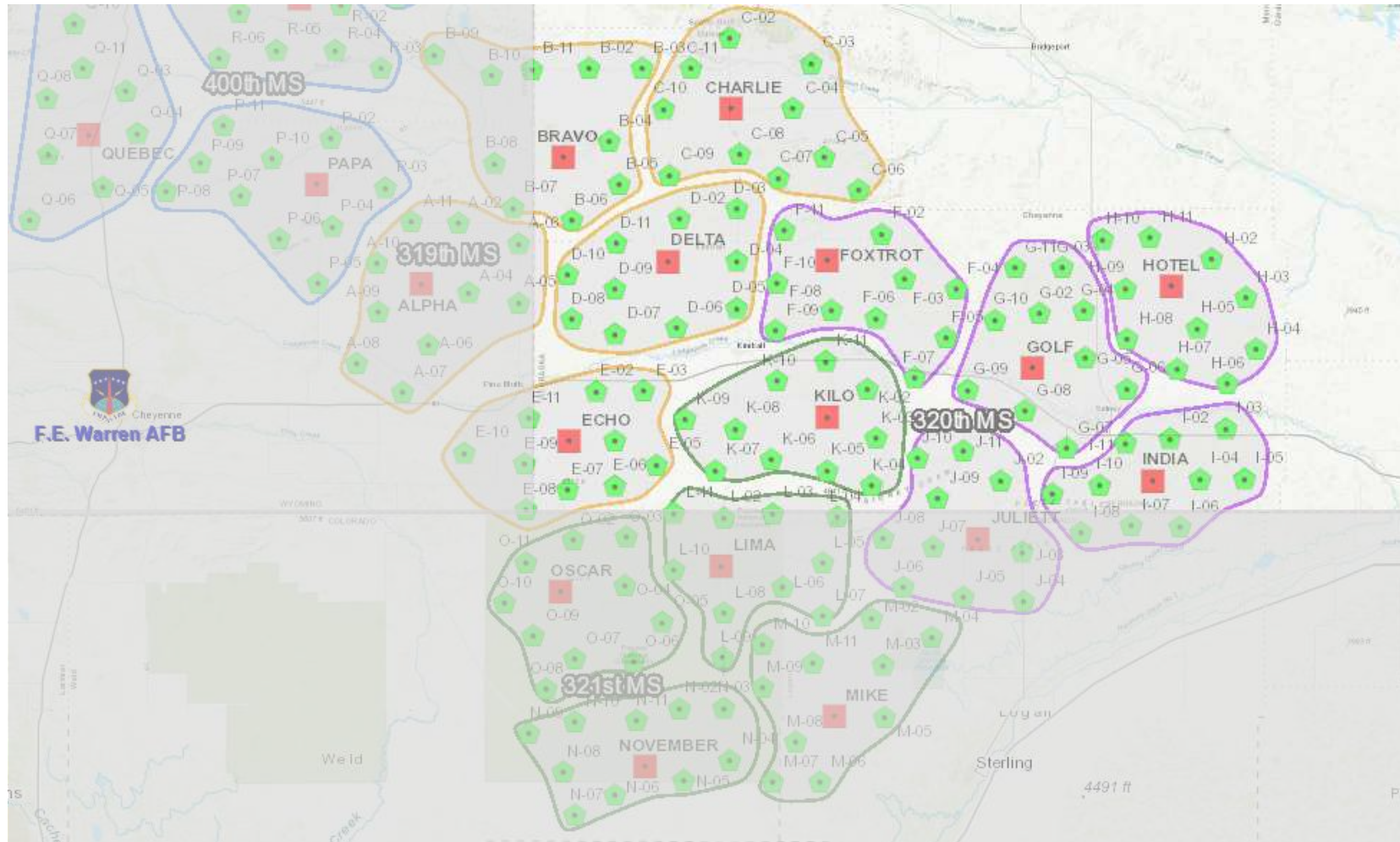






## DOD Siting Clearinghouse

- Created by Congress in January 2011
- Works with industry to overcome risks to national security while promoting compatible domestic energy development (wind, solar, transmission lines, cell towers, etc.).
- Acts as a single point of contact for Federal agencies; State, Indian tribal, and local governments; developers; and landowners, and provides a central forum for internal staffing.



## *Missile Flight Area*



**Missile Alert Facility (MAF)**



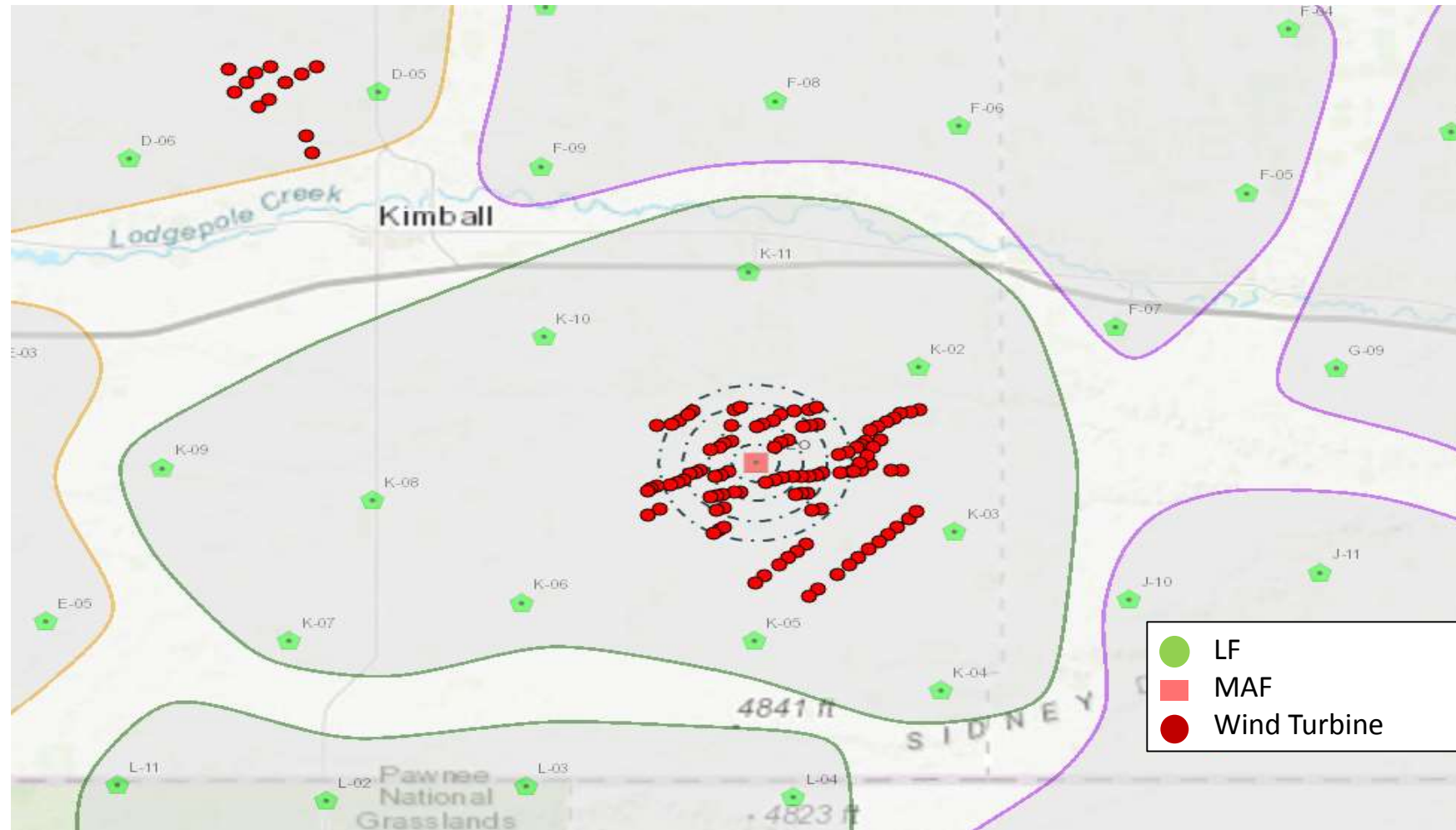
**Launch Facility (LF)**

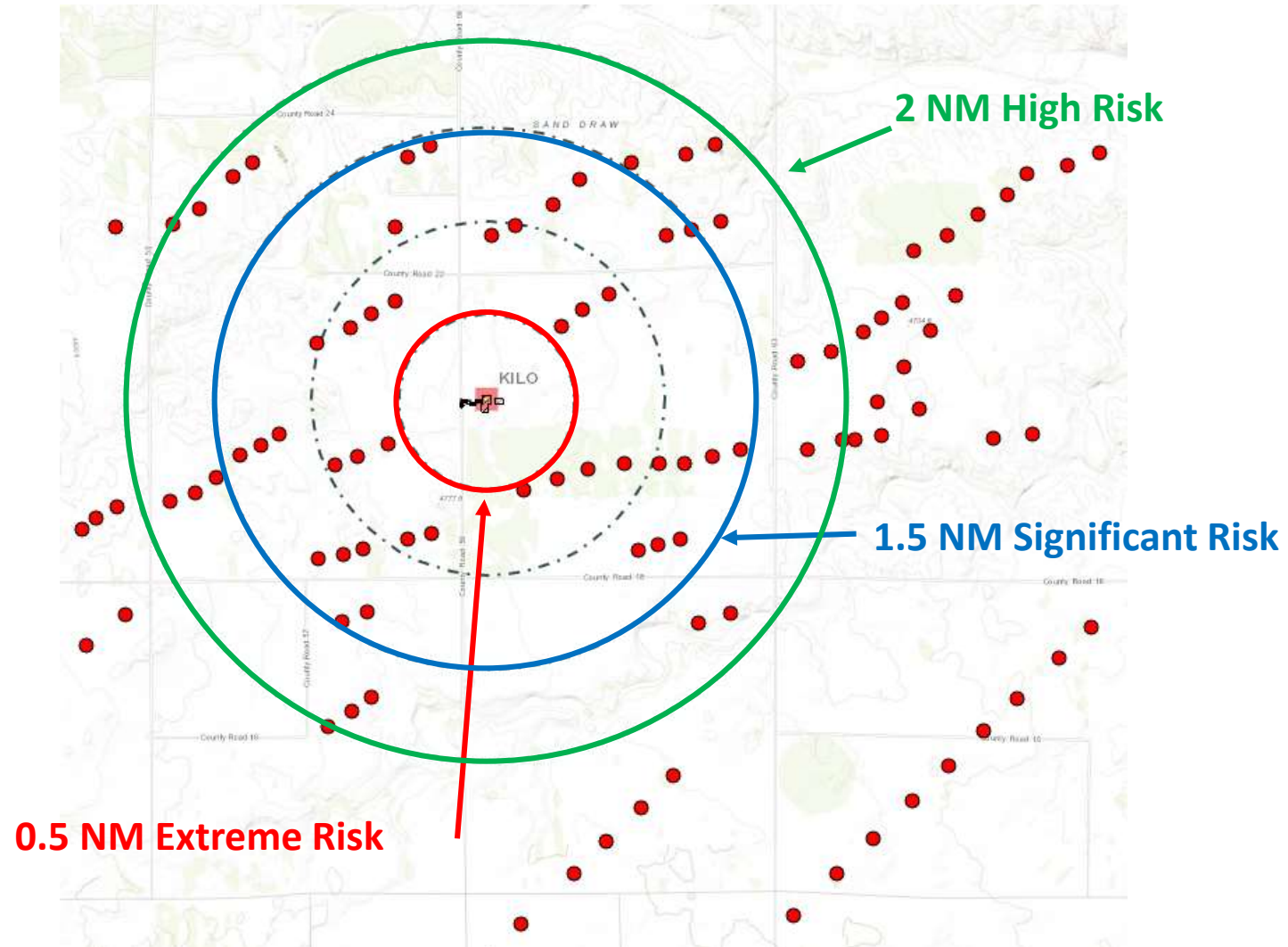
Minimum 3 nautical miles

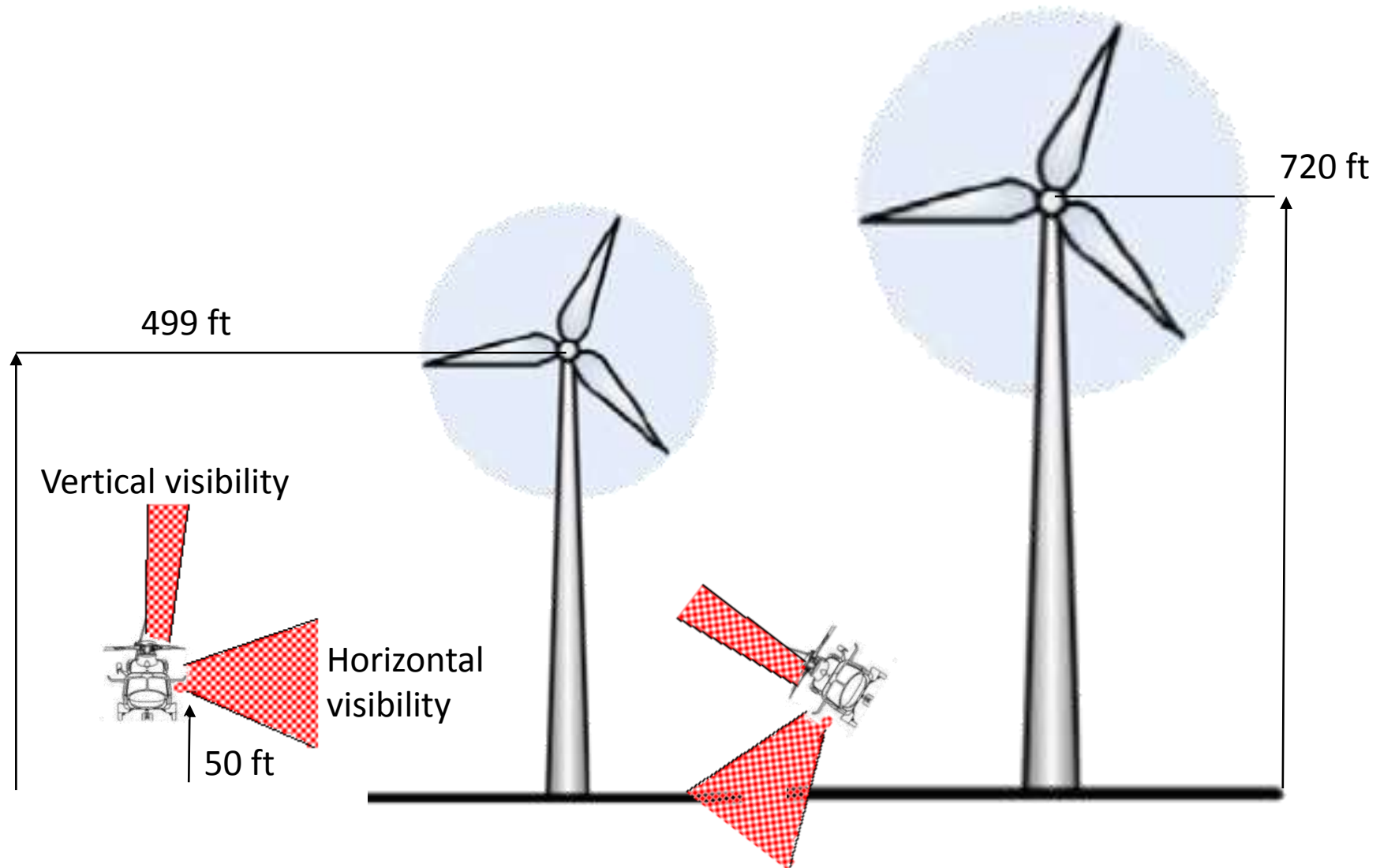


**Launch Control Center (LCC)**

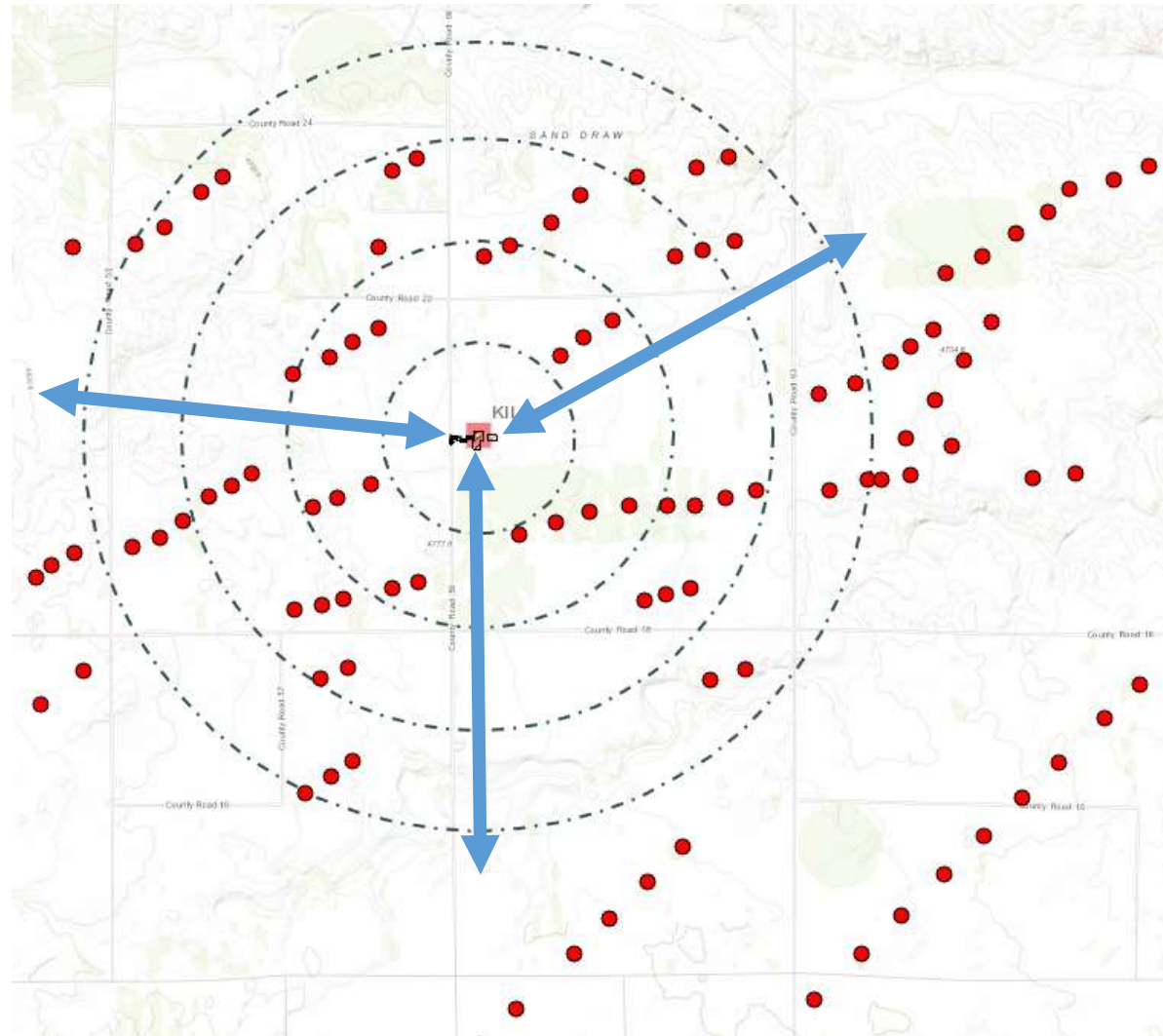


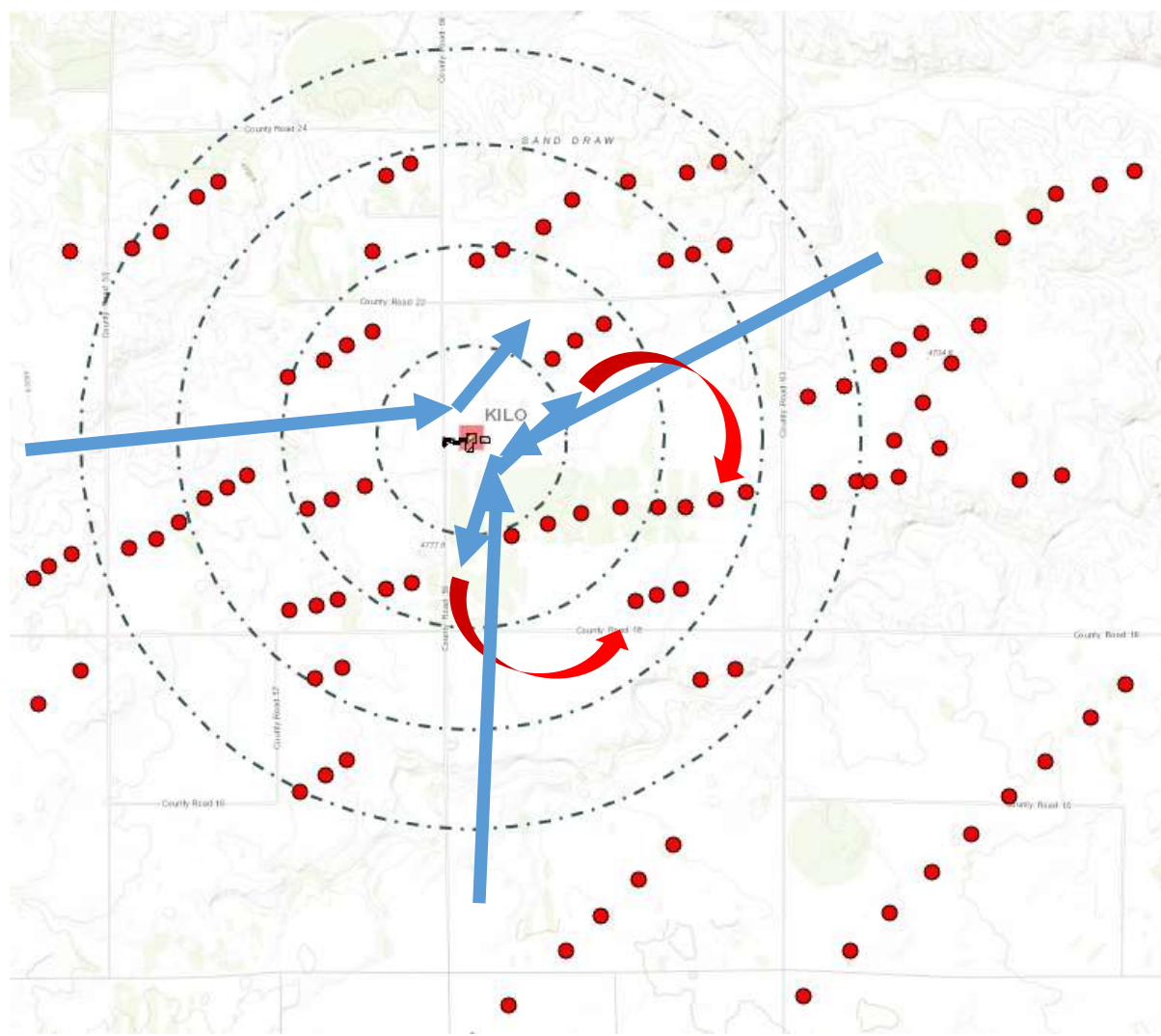


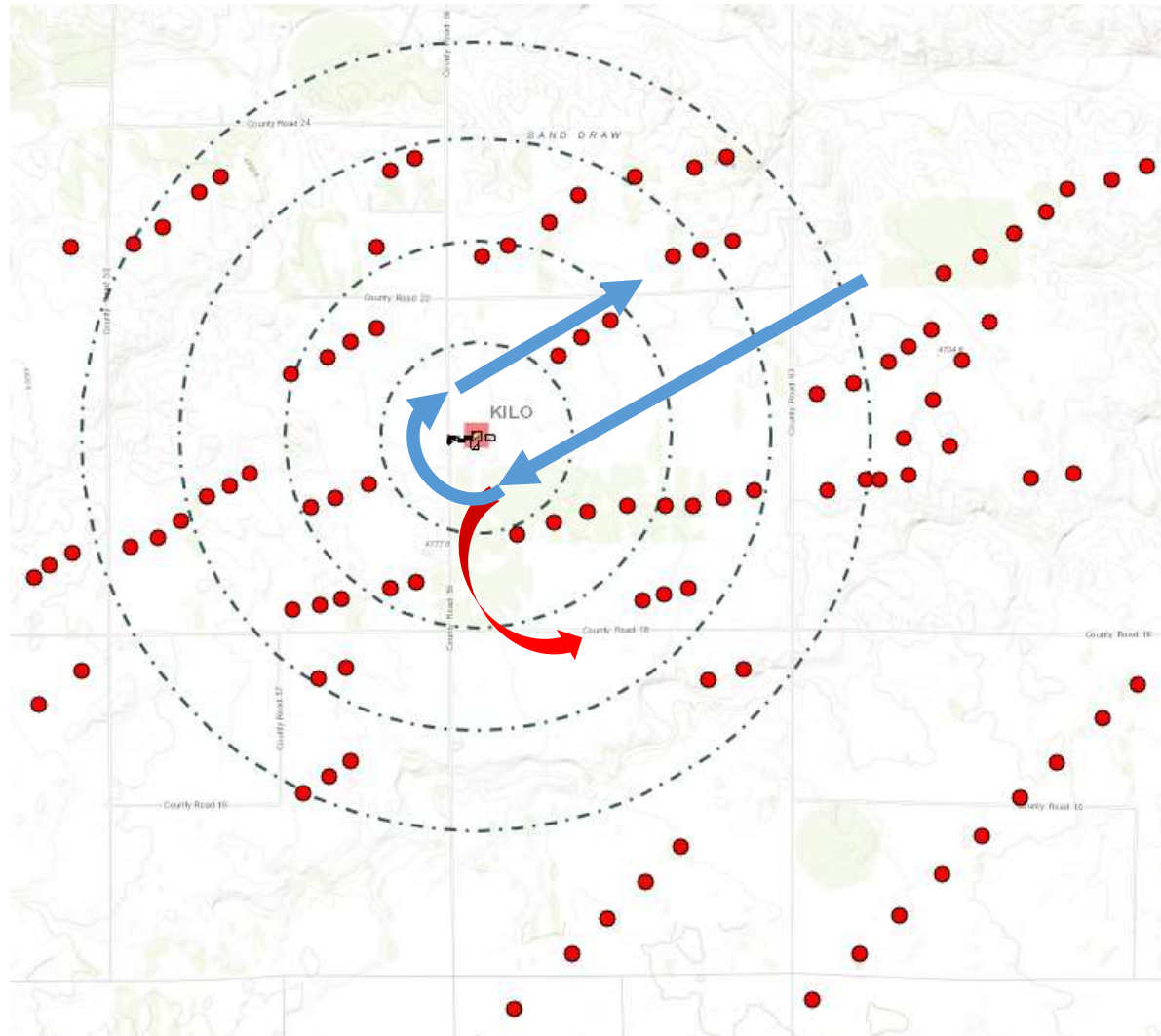




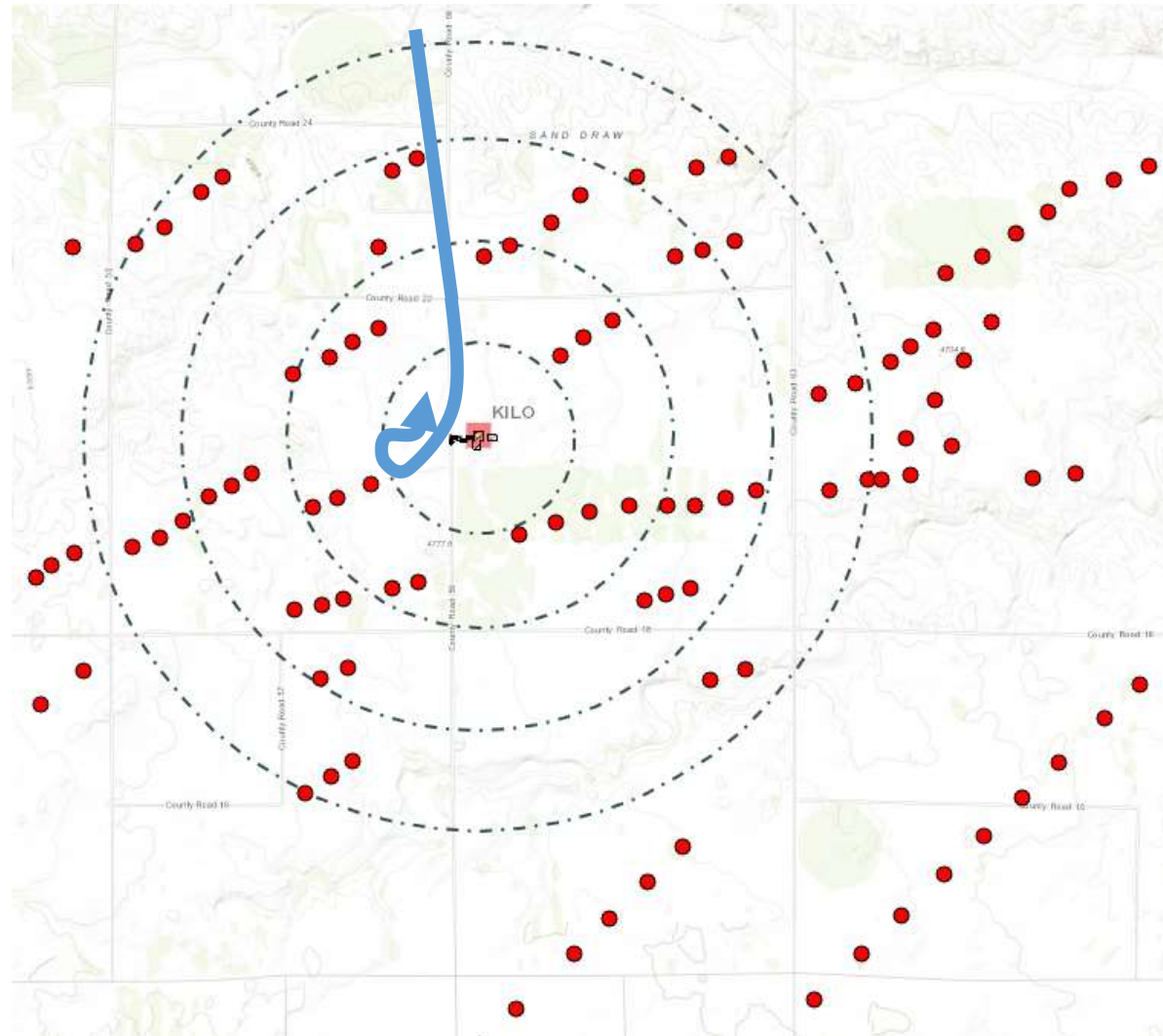




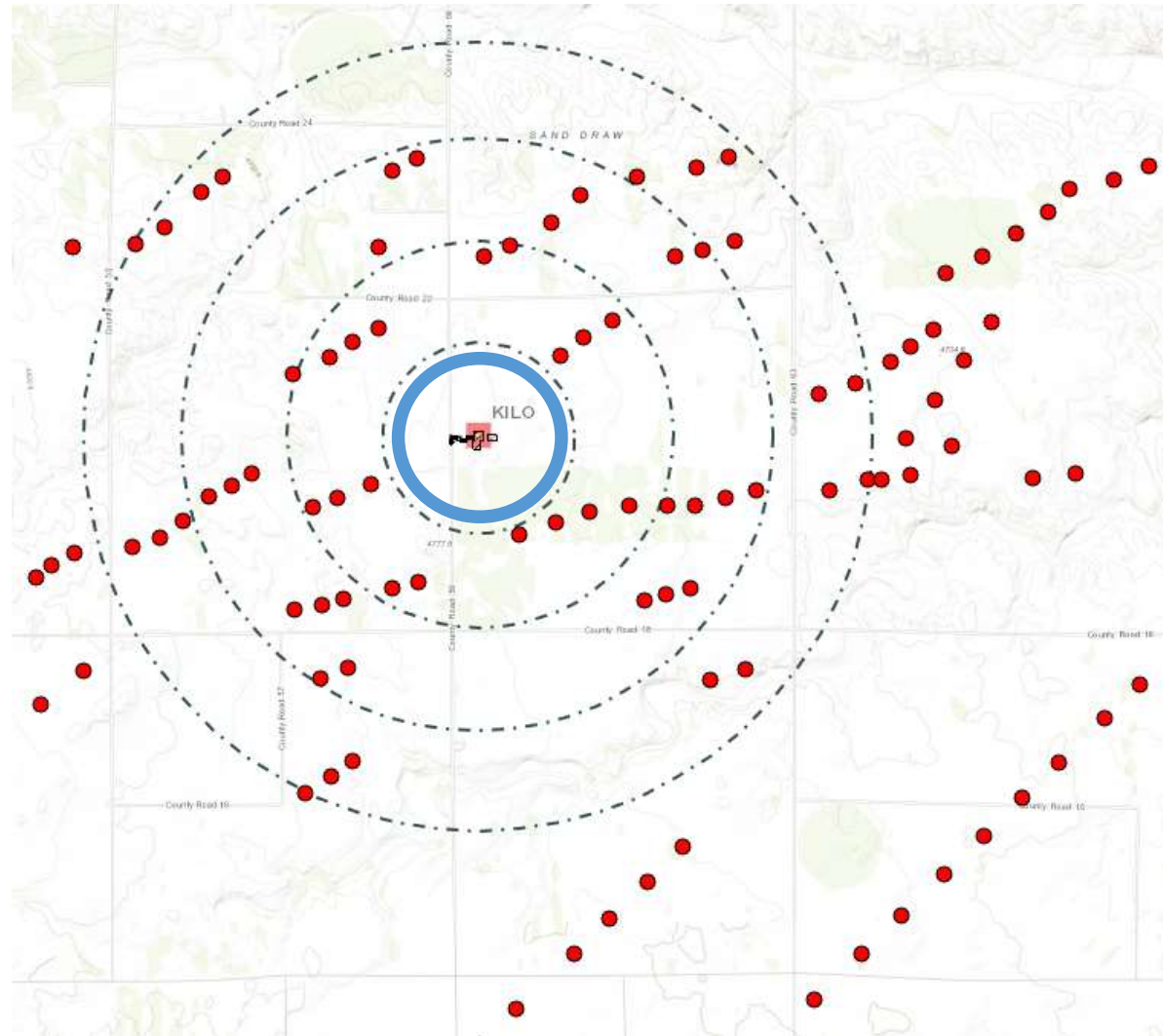














- **AF and DOD Levels**

- AFGSC/A3O working with Air Force Flight Standards Agency (AFFSA) to have the FAA recognize LF and MAF's as areas in which projects that are submitted to the FAA for a hazard determination are provided to the AF for input. This requires changes in the business rules between the AF and the FAA, ECD: October 2019
- 20 AF & 582 HG to complete Geographic Area of Concern (GAOC) for approval by the DOD. GAOC designates areas in which there is a risk of adverse impact on military operations and requires any project within that area to proceed to mitigation. The designation will be for a 2 NM radius for every LF and MAF within all three missile complexes.
- DOD Clearinghouse now engaged.

## • Installation – Community Engagement

- Engage with County Planning Boards, developers, and landowners to identify projects and inform them of operational impact
  - Will require additional manpower given scope of missile complex
    - **F.E. Warren: 3 States, 7 Counties**
    - **Minot: 8 Counties**
    - **Malmstrom: 9 Counties**
- Reinvigorate Installation Encroachment Management Teams
- Engagement at State level to highlight missile field encroachment issues

- **State Statutory/Regulatory Change**
  - Seek Legislation or Regulation in CO, WY, NE, MT, and ND that would forbid construction or expansion of wind energy facilities within 2 NM of a Launch Facility or Missile Alert Facility unless there is an approved mitigation plan from the DOD Siting Clearinghouse.
  - Any other State action prohibiting construction or expansion of wind energy facilities within 2 NM of a Launch Facility or Missile Alert Facility.



### State Action

**Oklahoma:** Passed in 2018/2019 – Requires DOD Determination of No Hazard

**New York** State Board on Electric Generation Siting and the Environment – Requires DOD Review

**Washington** Energy Facility Site Evaluation Council – Requires DOD Notification

**Texas:** No Tax Abatement if within 25 Miles of Military Aviation Installation

**California:** Provides a Variety of Options for DOD Involvement

**Virginia:** Model County Ordinance Suggests Notification to DOD Clearinghouse

**Maryland:** Wind Turbines within 46 Miles of Patuxent River Naval Air Station  
Requires PSC Approval

### Proposed State Action

**North Carolina:** House Bill Requiring DOD Involvement

**South Carolina:** Senate Bill Requiring DOD Clearinghouse Review

# Thank You



Photo Courtesy AWEA and Abigail Vander Hamm