Wind Energy Development and the Air Force

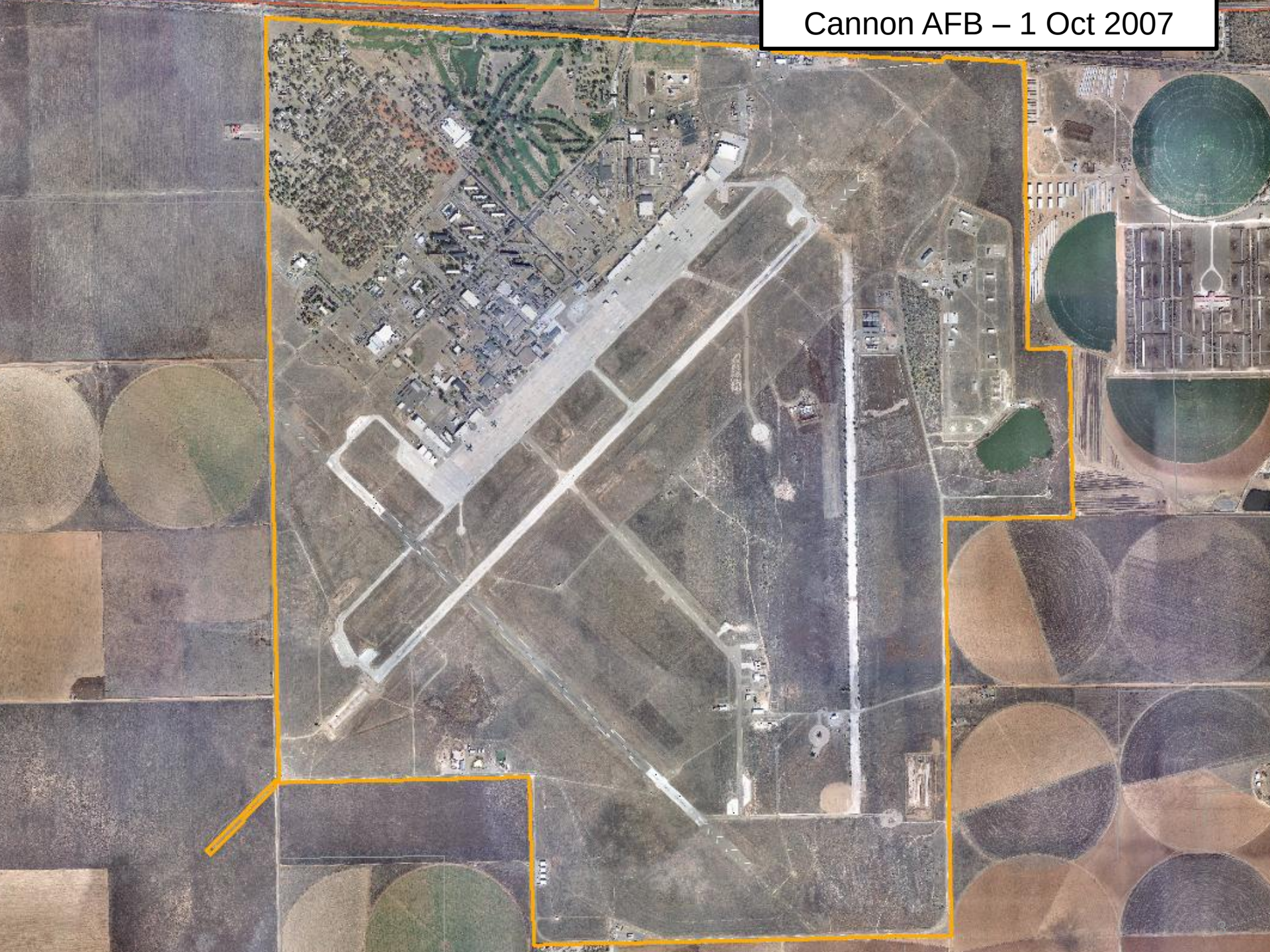
Col Buck Elton
Commander

This Briefing is:
UNCLASSIFIED

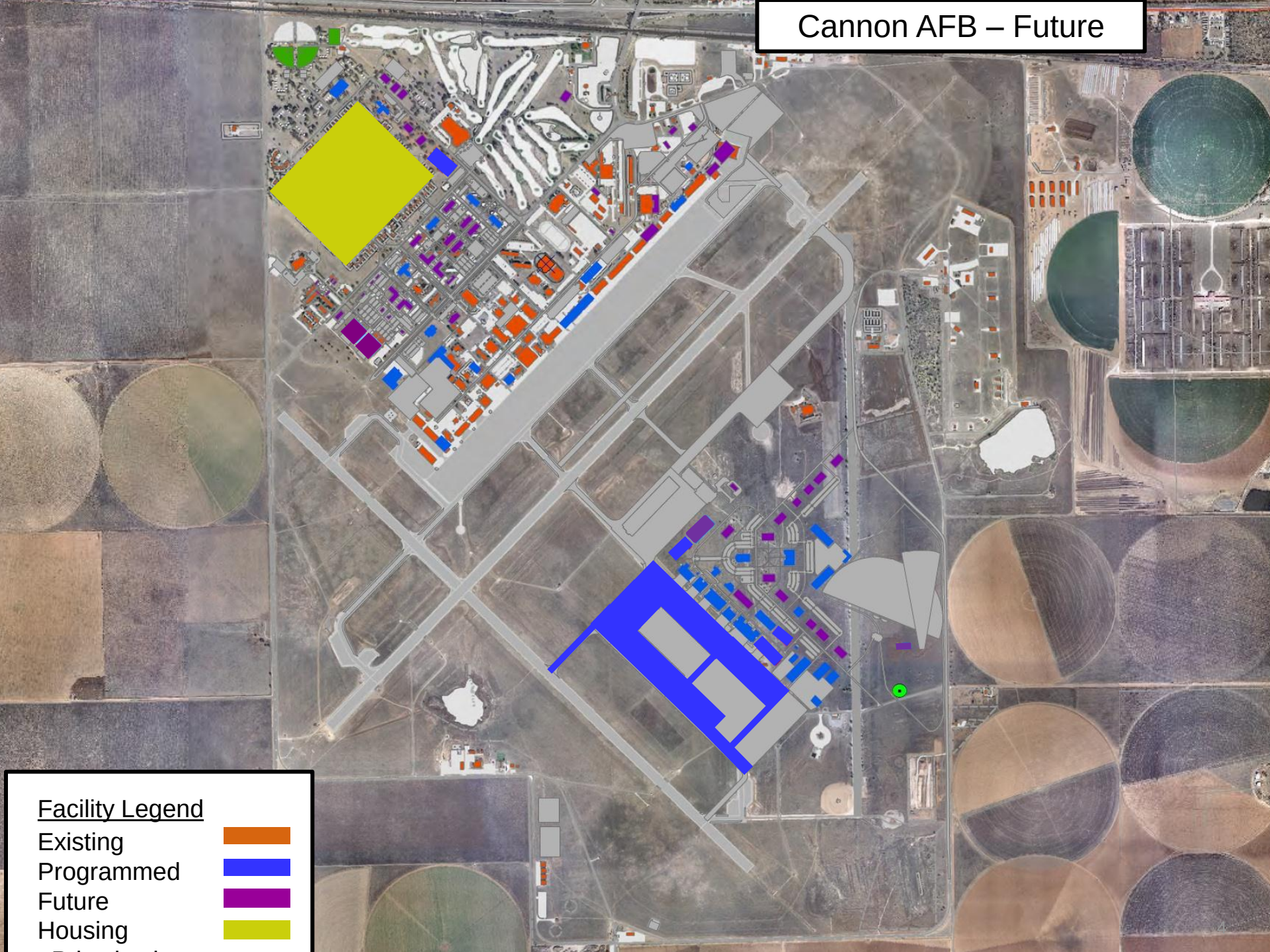
Who We Are

AFSOC
1 SOW
Hurlburt Field, FL
24 SOW
Hurlburt Field, FL
27 SOW
Cannon AFB, NM
352 SOG
RAF Mildenhall, UK
353 SOG
Kadena AB, Japan
193 SOW
(ANG)
Harrisburg, PA
919 SOW
(AFRES)
Duke Field, FL
AFSOAWC
Hurlburt Field, FL

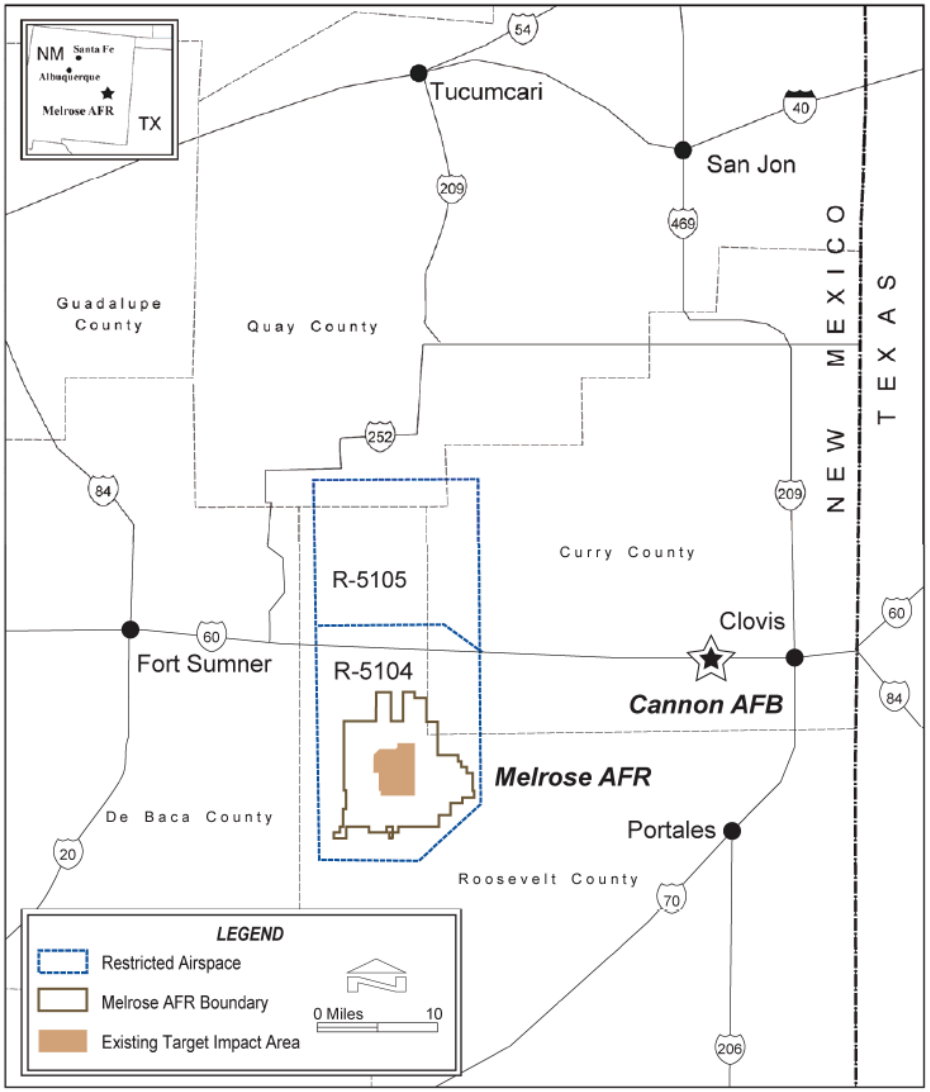
Cannon AFB – 1 Oct 2007



Cannon AFB – Future



Melrose Air Force Range



27 SOW Mission

- **27th Special Operations Wing generates and employs specialized aircraft and highly trained Air Commandos to execute and support special operations missions with unique capabilities including:**
  - Precision Air Fires
  - Specialized Mobility
  - Intelligence, Surveillance and Reconnaissance (ISR)
  - Command and Control (C2)
  - Agile Combat Support

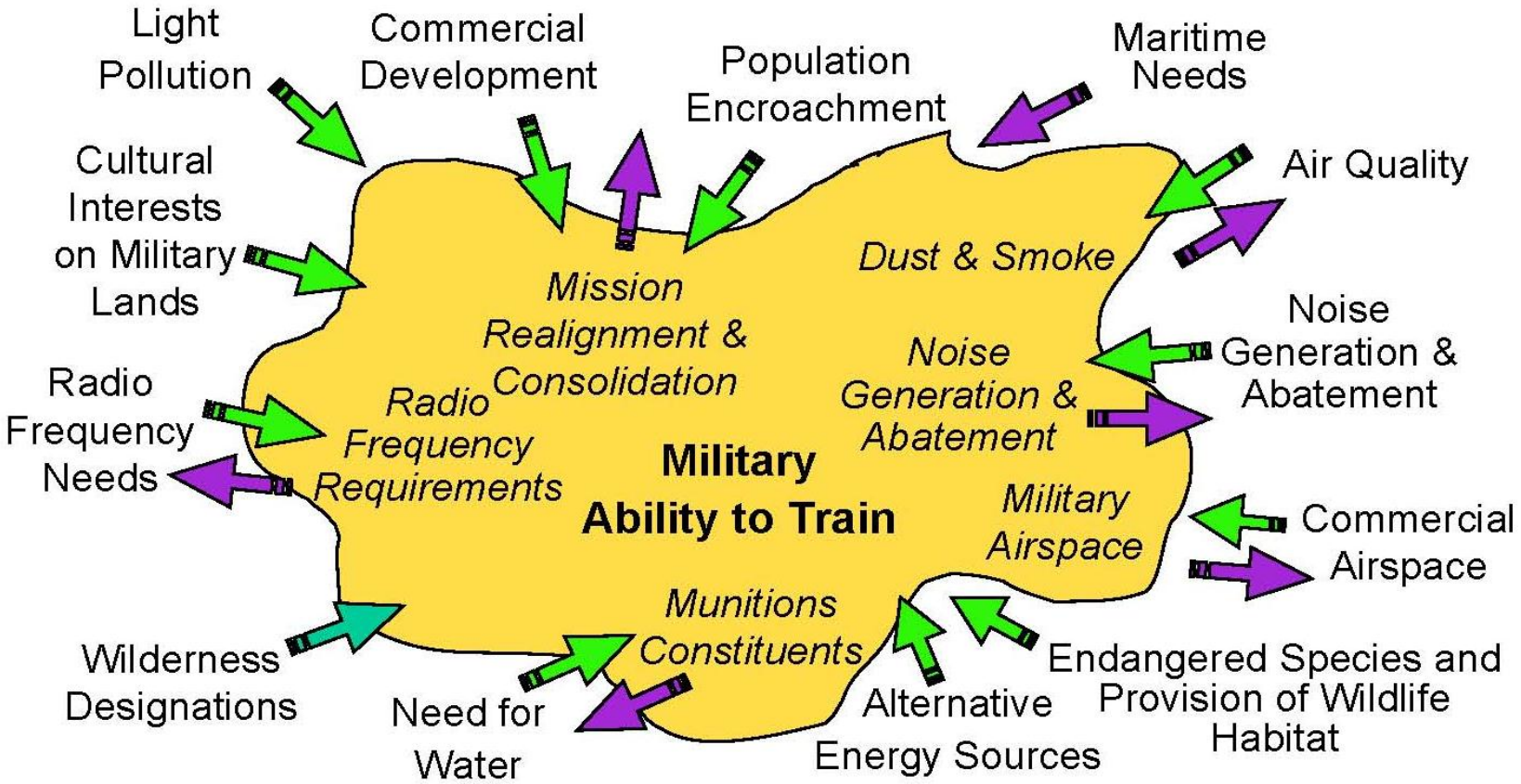
AFSOC

Why We Are Here This Morning

- **The USAF supports Wind Energy Development**
  - It is an objective of the Department of Defense to ensure that the robust development of renewable energy sources and the increased resiliency of the commercial electrical grid may move forward in the United States, while minimizing or mitigating any adverse impacts on military operations and readiness
  - Renewable energy development is vital to our national security
  - While DOD has a voice in some of these arenas, it has no direct authority over development of projects off of DOD-controlled land. In most cases, when an impact is found, the Air Force must ask another government agency to exert authority to alter a proposal.
  - Existing processes to include engagement with local and regional planning boards and development approval authorities should be employed to mitigate potential impacts.

Encroachment Pressures

Work Both Ways



Reduced Flexibility for the Military and the Community[5]

Dual Track Process to Assess Wind Energy Development

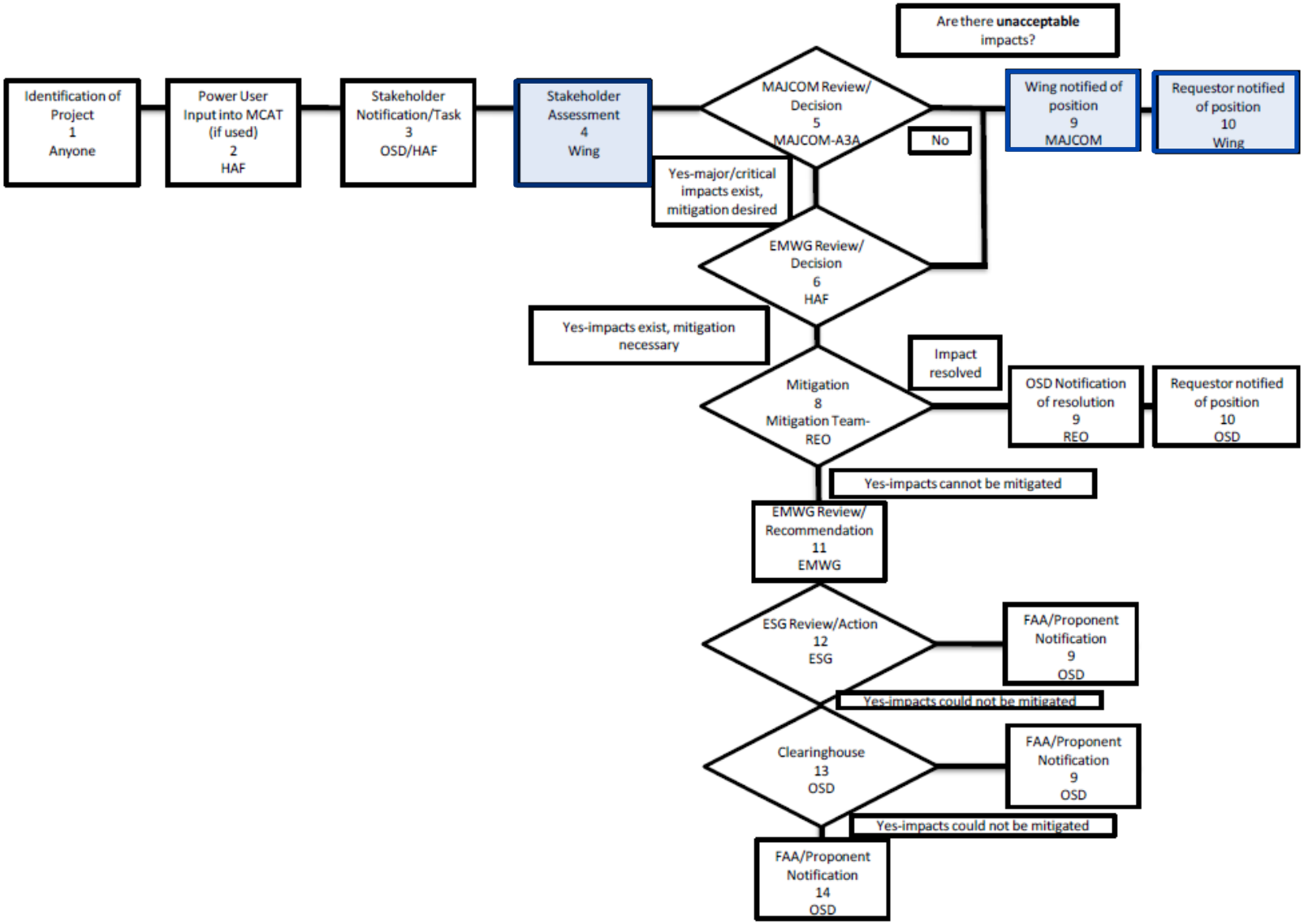
- **Encroachment on Military Readiness - DoD**
  - DoD Siting Clearinghouse chartered (via 2011 NDAA) to evaluate impacts to Military Readiness
  - The Clearinghouse is the single voice for DoD
- **Encroachment on National Airspace - FAA**
  - FAA Chartered (via U.S. Code) to evaluate impacts
  - Determination of “Hazard” or “No Hazard” to Air Navigation

DoD Siting Clearinghouse Concept of Operations

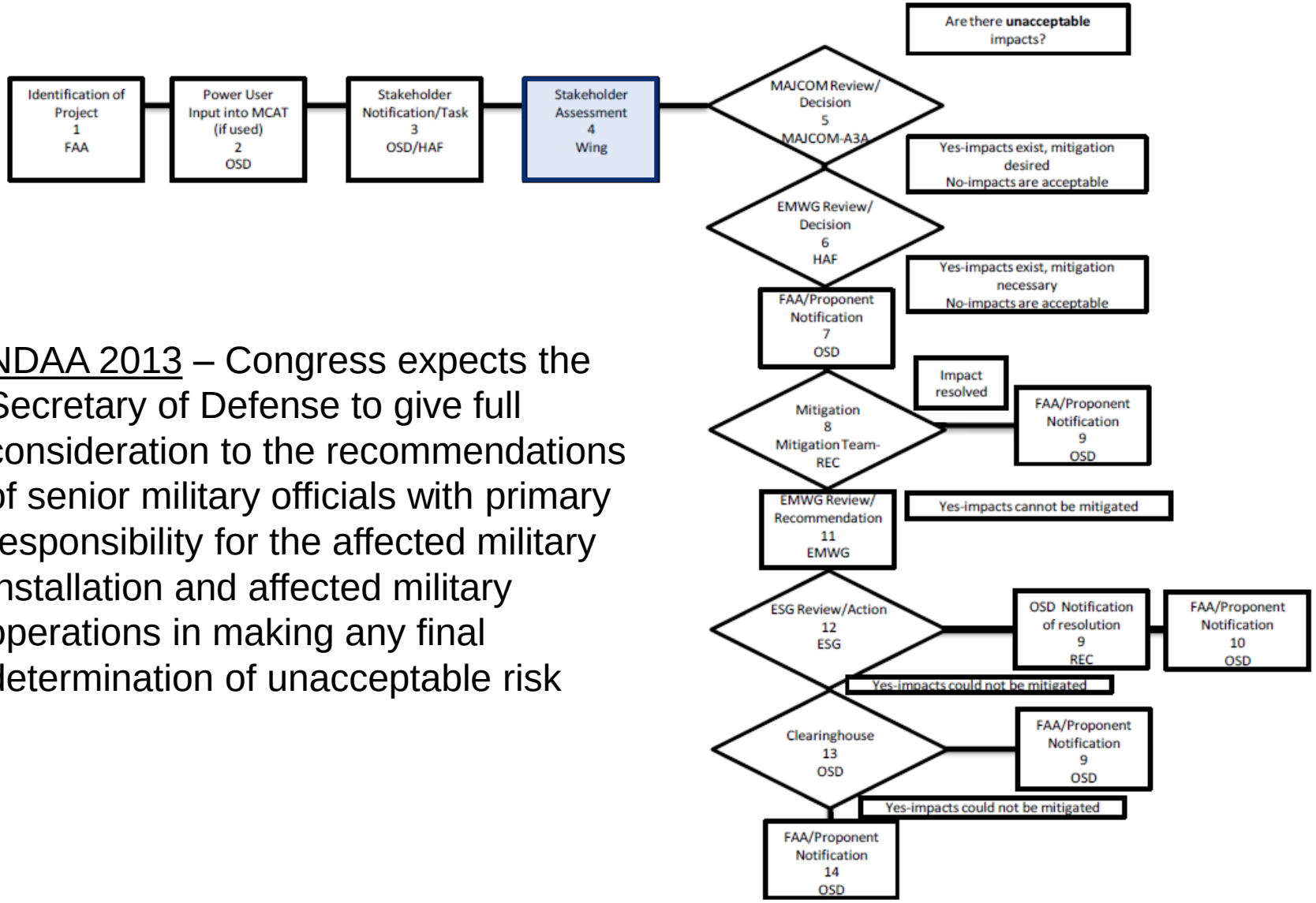
A Single DoD Voice

- Parallel Multi-Service Review
- Timely, Repeatable, Predictable Process
- Promote compatibility between renewable energy & military mission operations
- Oversight and coordination of mitigation negotiation
- Decisions based on empirical data and rigorous science
- Outreach & early consultation with industry, local, state, and Federal stakeholders
- NOT a replacement for OE/AAA , NTIA, or NEPA

Informal Consultation



Formal Application to FAA



NDAA 2013 – Congress expects the Secretary of Defense to give full consideration to the recommendations of senior military officials with primary responsibility for the affected military installation and affected military operations in making any final determination of unacceptable risk

Criteria for Evaluation of Impact

All proposals must be designated in one of the four following categories:

- Category 1: Minor/No Impact. Project will have no impact or an impact that can be easily overcome with little or no impact to mission.
- Category 2: Impact/No objection. Project has impacts to military operations and readiness, but do not warrant an objection through this process.
- Category 3: Major Impact/ Mitigation Required. This category includes projects that have an impact that will require mitigation. Subsequent negotiations with the developer will determine whether any mitigation options are viable.
- Category 4: Critical Impact/ No Mitigation Possible. Projects in this category must present an unacceptable adverse impact on military operations that cannot be overcome by known mitigation techniques.

FAA Charter

- **FAA JO 7400.2**
- **POLICY- to ensure the safety of air navigation, and the efficient utilization of navigable airspace by aircraft**

FAA Jurisdiction Codified in Federal Law

- **49 U.S.C. 40103 & 44718**
- **14 CFR Part 77**
  - Purpose
  - 14 CFR 77.9 – Construction Requiring FAA Notification

49 U.S.C. 40103 & 44718

- **The FAA Administrator has broad authority to *regulate the safe and efficient use of the navigable airspace***
- **The FAA Administrator is also authorized to issue air traffic rules and regulations to govern the flight, navigation, protection, and identification of aircraft for the *protection of persons and property on the ground, and for the efficient use of the navigable airspace***
- ***…the FAA determines whether such construction or alteration is an obstruction of the navigable airspace, or an interference with air navigation facilities and equipment or the navigable airspace***

14 CFR Part 77 - Purpose

14 CFR Part 77 establishes:

(a) The requirements to provide *notice to the FAA* of certain proposed construction, or the alteration of existing structures;

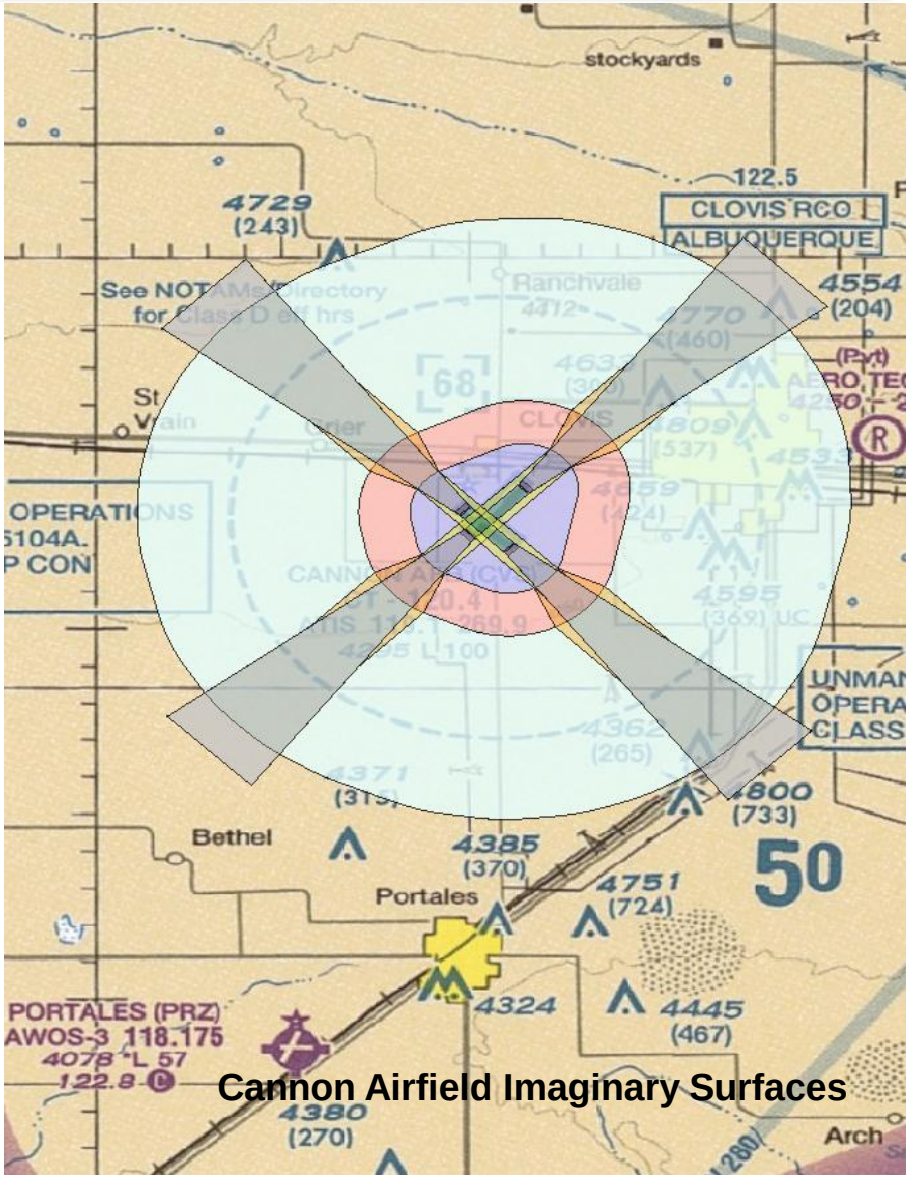
(b) The *standards used to determine obstructions to air navigation…*

(c) The process for aeronautical studies of obstructions to air navigation or navigational facilities to *determine the effect on the safe and efficient use of navigable airspace, air navigation facilities or equipment*; and

(d) The process to *petition* the FAA…

14 CFR Part 77.9
Construction Requiring Notice

- **Any construction or alteration that is more than 200’ Above Ground Level**
- **Any construction or alteration that exceeds an imaginary surface of an airport…**



Cannon Airfield Imaginary Surfaces

Additional Information:
See 14 Part 77

FAA OE/AAA Process

- Applies to any object more than 200 feet AGL
- Developer submits FAA form 7460-1 via OE-AAA web site
- Developer can request a feasibility study from the FAA
- Sent to Cannon from the FAA after developer submission
- Cannon has 14 day suspense back to the FAA
- Aeronautical study conducted by FAA IAW FAA JO 7400.2

FAA Guidance to TERPS

Paragraph 6-3-3 states Determining Adverse Effect

- Structure is considered to have an adverse effect if it first exceeds the obstruction standards of part 77, and/or is found to have physical or electromagnetic radiation effect on the operation of air navigation facilities.
- A proposed or existing structure, if not amended, altered, or removed, has an adverse effect if it would require
  - a change to an existing or planned IFR minimum flight altitude, a published or special instrument procedure, or an IFR departure procedure for a public−use airport.
  - Require a VFR operation, to change its regular flight course or altitude. This does not apply to VFR military training route (VR) operations conducted under part 137, or operations conducted under a waiver or exemption to the CFR.
  - Restrict the clear view of runways, helipads, taxiways, or traffic patterns from the airport traffic control tower cab.
  - Derogate airport capacity/efficiency.
  - Affect future VFR and/or IFR operations as indicated by plans on file.
  - Affect the usable length of an existing or planned runway.

FAA Guidance to TERPS

Determining Significant Volume of Activity

- Paragraph 6-3-4 states
- The type of activity must be considered in reaching a decision on the question of what volume of aeronautical activity is “significant.” For example:
- if one or more aeronautical operations per day would be affected, this would indicate regular and continuing activity, thus a significant volume no matter what the type of operation
- an affected instrument procedure or minimum altitude may need to be used only an average of once a week to be considered significant if the procedure is one which serves as the primary procedure under certain conditions.

FAA Guidance to TERPS

Substantial Adverse Impact

- A proposed structure would have, or an existing structure has, a substantial adverse effect if it causes electromagnetic interference to the operation of an air navigation facility or the signal used by aircraft, or if there is a combination of:
  - a. Adverse effect as described in paragraph 6−3−3; and
  - b. A significant volume of aeronautical operations, as described in paragraph 6−3−4, would be affected.

Identifying Impacts does <u>not</u> equate to FAA Determination of Hazard

Case Study: Broadview Prime

- **Broadview Prime file application with FAA**
- **27 SOW at Cannon AFB assigned the task of assessing impacts to Airspace/Aviation**
- **FAA criteria (as outlined on previous slides) is applied based on height and location information contained in application**
- **Impacts are identified…**

FAA Notice of "Presumed Hazard"

- "Cannon AFB TERPS office determines that a 1a survey on the obstructions will still require an increase to the MSA from 6000 to 6200 AMSL within 25 NM of Cannon. The MVA would increase from 6000 to 7000 AMSL. The MIFRAC would require an increase from 6000 to 7000 MSL. The holding pattern controlling obstacle would become number 2012-WTW-XXXX-OE. It is determined that with a vertical accuracy of 3' the penetration ranges from 150' to 76'."

- FAA continues analysis of identified impacts…

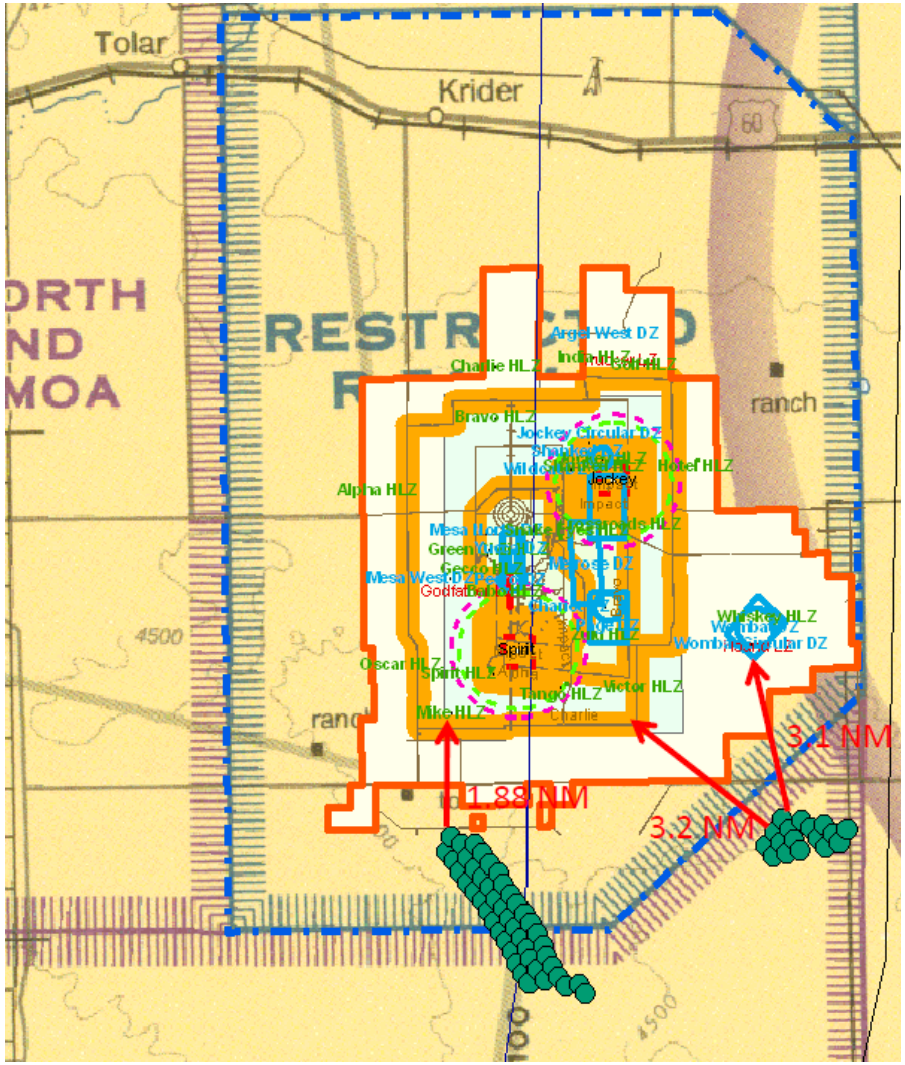
FAA Determination of "No Hazard"

- **Impacts ultimately assessed as not presenting significant hazard to protected airspace and general/military aviation**

- **Determination of "<u>No Hazard to Air Navigation</u>" issued on Jan 24, 2013**

- **FAA & DoD Clearinghouse "green light" for proposed Broadview Prime development**

Case Study: GreenWing Energy



- Proposed Development
  - No OE/AAA Application Filed
  - Height: 450' AGL or 4950' AMSL'
  - Siting – Private Land / Inside FAA Restricted Airspace
- Impacts to Military Readiness
  - Vertical obstruction to Tactical Landing Zones & Drop Zones on Melrose Range
  - Light pollution Impedes Night Operations on Melrose Range (primary training rqmt for SOF)
- Way Ahead
  - Assessed as Major Impact to Military Readiness
  - Submitted to AFSOC/HAF for DoD Clearinghouse Determination

Useful Links

- **Cannon AFB Website**

http://www.cannon.af.mil

- **DoD Siting Clearinghouse**

http://www.acq.osd.mil/dodsc

- **DoD Preliminary Screening Tool (Focus: Impact to Air Defense & Homeland Security radars)**

https://oeaaa.faa.gov/oeaaa/external/gisTools/gisAction.jsp?action=showLongRangeRadarToolForm

- **Obstruction Evaluation / Airport Airspace Analysis (OE/AAA)**

https://oeaaa.faa.gov/oeaaa/external/portal.jsp

- **NOAA Radar Operations Center (ROC) – Information**

http://www.roc.noaa.gov/WSR88D/WindFarm/GeneralPublic.aspx

- **NOAA Radar Operations Center (ROC) - WIND FARM DEVELOPERS**

http://www.roc.noaa.gov/WSR88D/WindFarm/WindFarmDeveloper.aspx?wid=dev

Questions?

Helpful Tools provided by FAA

DoD Preliminary Screening Tool

Page Safety Tools

OE/AAA will be offline on January 24, 2013 from 9:00PM to 9:30PM EST for system maintenance.

Federal Aviation Administration

« OE/AAA

Obstruction Evaluation
Version 2012.4.1

- Home
- FAA OE/AAA Offices
- View Determined Cases
- View Interim Cases
- View Proposed Cases
- View Supplemental Notices (Form 7460-2)
- View Circularized Cases
- Search Archives
- Download Archives
- Circle Search for Cases
- Circle Search for Airports
- General FAQs
- Wind Turbine FAQs
- Discretionary Review FAQs
- Notice Criteria Tool
- DoD Preliminary Screening Tool
- Wind Turbine Build Out
- Distance Calculation Tool

OE/AAA Account

- Portal Page
- My Cases (Off Airport)
- My Cases (On Airport)
- My Sponsors
- My Circ Comments
- Add New Case (Off Airport)
- Add New Case (On Airport)
- Add Supplemental Notice (7460-2 Form)
- My Case Transfer History
- Update User Account

DoD Preliminary Screening Tool

faa.gov Tools: Print this page

Disclaimer:

- The DoD Preliminary Screening Tool enables developers to obtain a preliminary review of potential impacts to Long-Range and Weather Radar(s), Military Training Route(s) and Special Airspace(s) prior to official OE/AAA filing. This tool will produce a map relating the structure to any of the DoD/DHS and NOAA resources listed above. The use of this tool is **100 % optional** and will provide a first level of feedback and single points of contact within the DoD/DHS and NOAA to discuss impacts/mitigation efforts on the military training mission and NEXRAD Weather Radars. **The use of this tool does not in any way replace the official FAA processes/procedures.**

Instructions:

- Select a screening type for your initial evaluation. Currently the system supports pre-screening on:
  -Air Defense and Homeland Security radars(Long Range Radar)
  -Weather Surveillance Radar-1988 Doppler radars(NEXRAD)
  -Military Operations
- Enter either a single point or a polygon and click submit to generate a long range radar analysis map.
- Military Operations is only available for a single point.
- At least three points are required for a polygon, with an optional fourth point.
- The largest polygon allowed has a maximum perimeter of 100 miles.

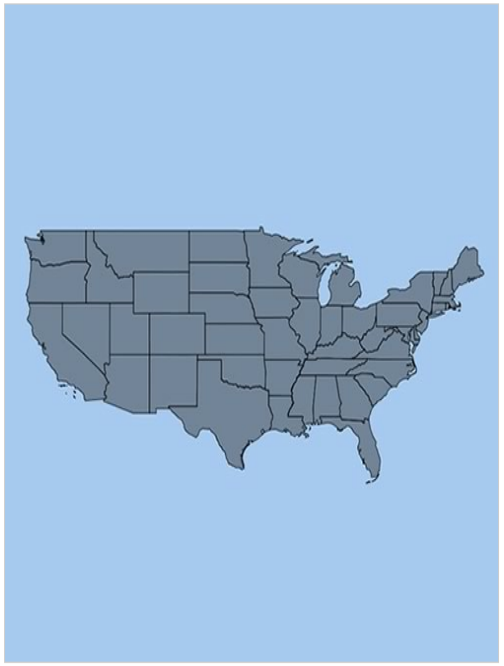
Screening Type: Military Operations **Geometry Type:** Single Point

Point	Latitude Deg	Min	Sec	Dir	Longitude Deg	Min	Sec	Dir
1				N				W

Horizontal Datum: NAD83

Submit

This is a preliminary review of your proposal and does not preclude official FAA processes.
Your search data is not retained and the privacy of all your searches is assured.



Any questions interpreting the map, please email Steve Sample with your question/s and phone number at steven.sample@pentagon.af.mil

Helpful Tools provided by FAA

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Screening Type: Long Range Radar **Geometry Type:** Single Point

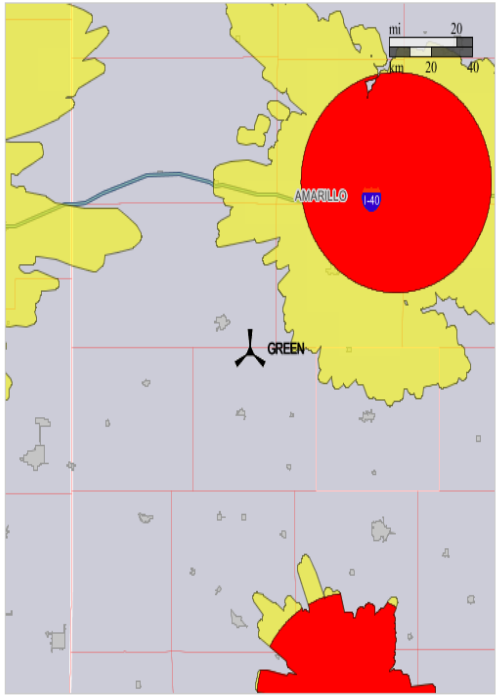
Point	Latitude Deg	Min	Sec	Dir	Longitude Deg	Min	Sec	Dir
1	34	44	40	N	102	16	48	W

Horizontal Datum: NAD83

Submit

Map Legend:

- **Green:** No anticipated impact to Air Defense and Homeland Security radars. Aeronautical study required.
- **Yellow:** Impact likely to Air Defense and Homeland Security radars. Aeronautical study required.
- **Red:** Impact highly likely to Air Defense and Homeland Security radars. Aeronautical study required.



Helpful Tools provided by FAA

DoD Preliminary Screening Tool - Internet Explorer provided by USAF

https://oeaaa.faa.gov/oeaaa/external/gisTools/gisAction.jsp

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- Logout

Information Resources

- FAA Acronyms

DoD Preliminary Screening Tool

faa.gov Tools: Print this page

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Screening Type: NEXRAD Geometry Type: Single Point

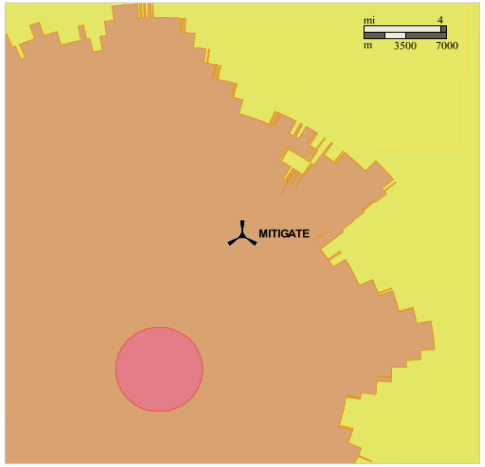
Point	Latitude Deg	Min	Sec	Dir	Longitude Deg	Min	Sec	Dir
1	34	43	16	N	103	33	23	W

Horizontal Datum: NAD83

Submit

Map Legend:

- **Green: No Impact Zone.** Impacts not likely. NOAA will not perform a detailed analysis, but would still like to know about the project.
- **Dk Green: Notification Zone.** Some impacts possible. Consultation with NOAA is optional, but NOAA would still like to know about the project.
- **Yellow: Consultation Zone.** Significant impacts possible. NOAA requests consultation to discuss project details and to perform a detailed impact analysis. NOAA may request mitigation of significant impacts.
- **Orange: Mitigation Zone.** Significant impacts likely. NOAA will likely request mitigation if a detailed analysis indicates that the project will cause significant impacts.
- **Red: No-Build Zone.** Severe impacts likely. NOAA requests developers not build wind turbines within 3 km of the NEXRAD. Detailed impact analysis required.



Because the NEXRAD can detect wind turbines occasionally at great distance, NOAA would like to know the location of all wind farm projects so that corrupted radar data can be flagged. Send project information directly to NOAA at wind.energy.matters@noaa.gov or through the National Telecommunications & Information Administration (NTIA) in the Dept. of Commerce. NOAA protects all wind project information as proprietary and sensitive.

Done Trusted sites | Protected Mode: Off 100%