DATE: February 5, 2020

TO: Solano County Airport Land Use Commissioners

FROM: Catherine Cook and Ross Sagun, Airport Land Use Commissioners

SUBJECT: Report on visit to Travis AFB RAPCON on January 16, 2020

Attendees:

ALUC Commissioners: Catherine Cook and Ross Sagun
Airfield Operations:
1Lt Dale Carlson Jr., Director of Operations
Ruben Rivera, Automation Manager
TSgt David Mathews, Systems Specialist
Capt Denise Poole, Flight Commander

Background:

Commissioners Cook and Sagun were invited to visit the Travis AFB Radar Approach Control (RAPCON) to gain insight on the issue of radar interference being caused by wind turbines in the vicinity of the base. Such radar interference is well documented and has been an ongoing concern to base air traffic controllers and the ALUC.

Visit Summary:

We were given a demonstration in the RAPCON simulator room of the wind turbine interference using live traffic. We were shown the differing view with and without the RAG (Range Azimuth Gate) mapping. The RAG mapping (a plot suppression mapping tool) reduces wind turbine and other sources of clutter. Unfortunately, it also negatively impacts the radar's ability to detect valid targets. The interference appeared significant and it was easy to understand the controllers' concerns.

The RAPCON controller staff voiced the following concerns:

1. Primary and/or secondary radar returns are occasionally lost due to the interference.
2. The interference causes false targets to appear. Such targets must be considered as potential conflicting traffic.
3. In either case, air traffic controllers must employ time-consuming, and occasionally work-intensive, procedures to maintain the level of safety.
4. Air traffic sometimes has to be rerouted to avoid the wind turbine interference area.
5. The interference significantly affects the ability of controllers to route traffic through the affected area; for example, circling approaches. This sometimes requires the rerouting of the traffic over more densely populated noise-sensitive areas and higher terrain
6. The interference affects primary arrival and departure routes to the Travis main and satellite airports, e.g. Rio Vista, Buchanan Field, etc.

7. The intermittent nature of the interference causes controllers to "lose confidence" in what their seeing on their radar scope.

Additionally, air traffic control management is concerned about the proliferation of wind turbines that would affect their airspace. There are approximately 600 wind turbines in the Wind Resource Area (WRA) at this time.

Mitigations:

Controllers use varying techniques and technologies to help mitigate and address the effects of the radar interference:

1. Radar filters –which have significantly reduced the interference (RAG mapping filter). While quite effective, it does not completely eliminate the interference. Unfortunately, the filter also obscures live traffic so the filter must be off if someone is in the WRA., or traffic is routed around it. The WRA (Wind resource Area) is approximately 69.3 square miles.
2. Time consuming and workload intensive procedures -- per the ATC Controller Manual 7110.65 to identify, re-identify, and separate traffic from known and false targets.
3. Ongoing development of new technologies through the DOD's Pilot Mitigation Program (PMP) -- such as a radar enhancement technology that effectively blocks out the interference. We were told that the development and implementation of the latter is at least 5 years away. Validating and certifying the new system will take a minimum of 5 years, and FAA says they don't have a validating system protocol in place so they are developing up in conjunction with this system.