



Agenda Submittal

**Agenda #:** **Status:** ALUC-Regular-NW  
**Type:** ALUC-Document **Department:** Airport Land Use Commission  
**File #:** AC 21-009 **Contact:** Jim Leland 784-6765  
**Agenda date:** 5/20/2021 **Final action:**  
**Title:** ALUC-21-03 Sacramento Municipal Utility District (SMUD) Solano 4 Wind Turbine Project

Conduct a Public hearing to consider an application (ALUC-21-03) from SMUD for a consistency determination for the Solano 4 Wind Turbine Project at 1785 Toland Lane in unincorporated Solano County. (Sponsor: Sacramento Municipal Utility District)

**Governing body:** Airport Land Use Commission

**District:**

**Attachments:** 1. A - Complete submittal package, 2. B - SMUD ALUC Application, 3. C - SMUD Referral Cover Ltr, 4. D - Travis AFB Pilot Mitigation Project Summary PUBLIC, 5. E - Westslope Consulting Ltr (1), 6. F - SMUD Office Memo, 7. G - 60th Air Mobility Wing (AMW) letter, 8. H - Office of the Assistant Secretary of Defense letter, 9. I - Letter to A. Rice-SMUD re Solano 4 DEIR - 9-6-19, 10. J - Solano County ALUC SMUD Solano 4 Consistency Analysis Memo

Date	Ver.	Action By	Action	Result
5/20/2021	1	Airport Land Use Commission		

**RECOMMENDATION:**

Staff recommends that the Commission conduct a public hearing and determine that application (ALUC-2021-03) from SMUD for the Solano 4 Wind Turbine Project:

- 1. **Is not consistent** with the Section 5.6.1 compatibility criteria set forth in the Travis Plan for wind turbines, and
- 2. **Does not** meet the requirements for an exception under Section 6.2.4 (c)(6) Other Special Conditions.

**DISCUSSION:**

I. INTRODUCTION

A. SMUD Project Description

The Sacramento Municipal Utility District (SMUD) has filed an application to modify their existing commercial scale wind farm on 2,549 acres of land located at 1785 Toland Lane in unincorporated Solano County (see Attachments A).

SMUD is proposing to replace 23 existing wind turbines having their highest blade tip elevations ranging from 242' to 291' above ground level (AGL) with 19 new wind turbines with tower heights of 360 feet AGL and highest blade tip elevations ranging from 493' to 591 feet AGL. The new wind turbines will be located on two separate and distinct portions of the site. The east portion of the site will receive 9 new turbines and the west portion of the site will receive 10 new turbines. The specific components of the project include new wind turbine generators and towers with new rotor blades and braking systems. In addition, there are new meteorological towers, an upgrade to the substation, new roads and the decommissioning of the existing wind turbine equipment.

B. ALUC Jurisdiction

The Aeronautics Act confers jurisdiction of the ALUC to review and make consistency findings for projects, including the present one, undertaken by Special Districts such as SMUD.

#### State Aeronautics Act

The Airport Land Use Commission derives its authorities from the State Aeronautics Act (Public Utilities Code, Division 9, Part 1, Chapter 4). Among other provisions, the Act provides in section 21670, subdivision (f) that special districts are included among the local agencies that are subject to airport land use laws and other requirements.

#### Division of Aeronautics

Regarding the present Project, the Department of Transportation, Division of Aeronautics provided a comment letter to SMUD, dated September 3, 2019, (Attachment C) stating that the project site is within the Travis Air Force Base Airport Land Use Compatibility Plan (Travis Plan) boundaries as adopted by the Solano County Airport Land Use Commission (ALUC) and must be referred to the ALUC for a consistency determination with the Travis Plan (in accordance with the California Airport Land Use Planning Handbook and relevant Sections of Article 3.5 of the State Aeronautics Act in the Public Utilities Code).

The Division of Aeronautics *California Airport Land Use Planning Handbook*, which addresses the scope of authority for an ALUC, states that...

“Pursuant to PUC Section 21670(f), the State Legislature has clarified its intent that “special districts, school districts, and community college districts are included among the local agencies that are subject to airport land use laws and other requirements of this article. Accordingly, ALUCs shall review land use plans, master plans, individual development projects, and other comparable actions proposed by the three types of districts identified above. As described in this chapter, the adoption and amendment of land use plans (general and specific plans) and development ordinances form a basis for cities and counties to engage in airport land use compatibility planning. Special districts, school districts, and community college districts do not, as a general rule, prepare such plans and ordinances. They do, however, acquire land and build or lease facilities, which would be actions subject to review within the AIA (or within two miles of an airport in the absence of an adopted AIA). “

For the foregoing reasons, the present SMUD project is within the jurisdiction of the ALUC to conduct a compatibility review with the Travis Plan and make relevant findings, to be discussed below.

## **II. ALUC REVIEW**

Staff has reviewed the application materials for the SMUD Solano 4 Wind Turbine Project and offers our analysis and recommendations below.

In addition, staff has engaged the services of ESA Airports, the consulting firm which assisted the ALUC with the preparation of the 2015 Travis Plan. ESA conducted a review of the SMUD application materials and provided comments to staff. Their full report is attached (Attachment J). We have summarized their specific comments into various portions of the report where appropriate.

### **A. SMUD Referral Letter**

In their referral letter of April 1, 2021 (Attachment C), SMUD sets forth several reasons why their project can be found consistent with the Travis Plan Air Force Base Land Use Compatibility Plan (Travis Plan). Specifically, the SMUD referral letter contends that the project is:

1. Consistent with the compatibility criteria set forth in the Travis Plan, and that
2. Even if their project were not strictly consistent with the compatibility criteria in the Travis Plan, then the project meets the criteria necessary to be considered exempt by the Commission from the compatibility criteria pursuant to Section 6.2.4 (c)(6) (Other Special Conditions) in the Travis Plan.

Staff has provided an analysis of each of the contentions below.

## B. CONSISTENCY WITH COMPATABILITY CRITERIA ISSUE

### SMUD Referral Letter

The SMUD Referral Letter cites three major reasons why the project should be considered consistent with the Travis Plan, including:

1. The project is vital to SMUD's efforts to eliminate the carbon footprint from its energy generation portfolio to reduce greenhouse gases, minimize other air quality emissions, and combat climate change.
2. SMUD has collaborated with various government entities, including the ALUC and TAFB, to ensure the Project will "meet standards of aeronautical safety and pose no additional burden on the Base's radar system", including providing opportunities for TAFB to perform their own studies.
3. SMUD purchased its land and development rights for the Project prior to the Project area being within the perimeter of the Travis Plan and could not have known the Travis Plan perimeter would extend as far as it now does. As such, SMUD's "investment backed expectations" in the Wind Resource Area should be given due consideration by the Commission.

SMUD also states that they have worked with Westslope Consulting, LLC and Capitol Airspace Group, LLC to minimize the potential effects on the Travis AFB radar system and airspace, and adjusted the Project's configuration "in order to completely offset the radar impacts from the Project", including retiring Solano 1 wind turbines before the expiration of their useful life. Hiring these contractors and removing useful wind turbines comes at a financial cost to SMUD, resulting in fewer wind turbines installed as part of the Project, and, according to SMUD, "causing no impact to aerial navigation at Travis AFB or to its radar system or operations". SMUD states this conclusion is supported by studies from its contractors and from military and agency review, including the following:

- A letter from Colonel Simmons, Commander of the 60<sup>th</sup> Air Mobility Wing concluding that "Solano 4 should have minimal negative impact on Travis Operations."
- The Department of Defense Clearinghouse determined that Solano 4 "will not present an adverse impact to military operations."
- The FAA determined that the proposed Solano 4 wind turbines "would not cause an unacceptable adverse impact on ATC operations at this time" and "would not have a substantial adverse effect on the safe and efficient utilization of the navigable airspace by aircraft or on any air navigation facility and would not be a hazard to air navigation" provided SMUD meets the conditions imposed by the FAA, which SMUD attests it will. These letters and determinations are also included with the application materials.

The referral letter concludes the consistency discussion with:

"We trust the above materials are sufficient to enable the ALUC to make its consistency findings"

Refer to Attachment C for SMUD's full statements in their referral letter.

### Applicable Consistency Criteria

#### *Applicable Airport Land Use Plans and Compatibility Criteria:*

As required by the State Aeronautics Act, the Airport Land Use Commission has prepared Airport Land Use Compatibility Plans (ALUCP) for each of the three airports within Solano County.

The proposed project is located within the Area of Influence of the Travis Plan, specifically within Compatibility Zones D and E of the Travis Plan. The Compatibility Criteria for Zones D and E are provided below.

#### *Compatibility Zone D and E Criteria:*

Compatibility Zones D and E are the least restrictive zones focused mainly on tall objects, wildlife hazards, solar projects

and wind turbines. The specific compatibility criteria applicable to wind turbines in both Compatibility Zones D and E are listed below:

There are "Other Development Conditions" listed in Compatibility Zone E, as follows:

1. ALUC review required for objects > 200 feet AGL
2. All proposed wind turbines must meet line-of-sight criteria in Policy 5.6.1(b)

Policy 5.6.1 recognizes that wind turbines can generate air traffic control radar interference, rotor turbulence, and vertical obstruction hazards for aircraft operations at Travis AFB and that the beyond the radar line-of-sight method of siting wind turbines is the most proven and effective method for minimizing wind turbine impacts on a radar's aircraft detection capabilities. Siting wind turbines outside of the radar's line-of-sight is critical to mitigating additional cumulative effects arising from the addition of new turbines to those already existing within the current radar line-of-sight as every turbine within the radar's line-of-sight negatively impacts the radar. To accomplish this standard, the specific compatibility criteria for all new wind turbines set forth in Policy 5.6.1(b) are summarized below:

- (a) Any wind turbine less than 100' AGL can be built anywhere in the County.
- (b) No wind turbine greater than 100 feet AGL shall be within a line-of-sight of the Travis AFB Digital Airport Surveillance Radar (DASR) Radar Installation.

All wind turbine facilities greater than 100 feet AGL shall provide an individual radar line-of-sight analysis to demonstrate that the placement of the proposed wind turbine is not within a line-of-sight to the Travis DASR Radar Installation and shall be referred to the ALUC for a consistency determination.

- (c) Existing commercial and non-commercial wind turbines, in existence at the time of adoption of the LUCP can be replaced like for like (identical dimensions and constructed of the same materials) without ALUC review provided there is no increase in height of reflectivity from the materials used.
  - Replacement turbines greater than 100' AGL with different dimensions than the originally permitted turbine are subject to Policy 5.6.1(b) above and shall be referred to the ALUC for a consistency determination and shall include an individual radar line-of-site analysis to demonstrate that the placement of the proposed wind turbine is not within a line-of-sight to the Travis DASR Radar Installation.
- (d) In locations where new wind turbines are authorized under this LUCP, these facilities can be replaced without ALUC review if there is no increase in height or reflectivity.

#### Discussion of Consistency with Section 5.6.1 Criteria

Staff's review of SMUD's compliance with Policy 5.6.1 criteria is provided below.

*Section 5.6.1(a) - wind turbines 100 feet or less in height are not regulated by the ALUC and are thus permitted anywhere in the county under the Travis Plan.*

#### Staff Analysis

The SMUD wind turbines are more than 100 feet in height and thus this section is not applicable to the Solano 4 Wind Turbine Project.

*Section 5.6.1(b) - no wind turbine greater than 100 feet in height shall be permitted within the line-of-sight of the Travis AFB Digital Airport Surveillance Radar (DASR) Radar Installation*

#### SMUD Position

The March 11, 2011 Westslope Consulting letter included in SMUD's application contends that the wind turbines will be within the line of sight to TAFB but will not impact base operations.

SMUD also included a line-of-sight analysis prepared by Westslope Consulting in their application that finds all 10 proposed V136 wind turbines at a blade-tip height of 493 feet AGL and all nine proposed V150 wind turbines at a

blade-tip height of 591 feet AGL will be visible to the Travis AFB DASR. Westslope Consultants also reports that the 23 existing wind turbines are currently visible to the Travis AFB DASR causing such radar effects as a partial loss of primary radar target detection and a number of primary radar false targets over and in the immediate vicinity of these existing wind turbines, in addition to impacts on weather detection and indications. The 23 existing wind turbines, located in the western portion of the Project, will be replaced with 10 of the new wind turbines (with the other nine new wind turbines being proposed for construction in the eastern portion of the Project). Westslope Consulting reports that a decrease to the existing radar effects is expected once these 23 existing wind turbines are removed and replaced with the 10 new wind turbines in the western portion of the Project.

Westslope does recognize that any land use involving a wind turbine within line-of-sight of the Travis AFB DASR is considered incompatible with the Travis Plan.

#### ESA Comment

ESA comments that since the Project would be within line-of-sight of the DASR radar installation based on the information in SMUD's application, it would conflict with this criterion applicable in both Compatibility Zones D and E.

#### Staff Analysis

The Westslope Consulting line-of-sight analysis confers an expected decrease in radar effects once ten of the nineteen new wind turbines are placed in the western portion of the Project, replacing the existing 23 wind turbines in that same general area. It is not clear from the analysis if there is any expected decrease in radar interference from the other nine new wind turbines to be placed in the eastern portion of the Project. These wind turbines, which will be visible to and interfere with the DASR, are to be installed in the same general location where 59 wind turbines that were not within the line-of-sight of the DASR once stood and were deconstructed.

Once constructed, all 19 new wind turbines will be in the line-of-sight of the Travis AFB DASR Radar Installation. Section 5.6.1(b) does not offer an exception to the line-of-sight criteria for wind turbines over 100'; rather, it is an absolute prohibition on the siting such wind turbines if they are within the line-of-sight of the radar.

As a result, the SMUD Solano 4 Wind Project is not consistent with this compatibility criteria standard.

*Section 5.6.1(c) - existing turbines greater than 100 feet in height may be replaced with new turbines of identical height and constructed of the same materials. Any new replacement turbines of greater heights than the turbines which they are replacing, must be reviewed by the ALUC and include a line-of-site study demonstrating that they are not within the line-of-site of the Travis AFB Digital Airport Surveillance Radar (DASR) Radar Installation.*

#### SMUD Position

The SMUD project description indicates that the 19 new turbines are taller than the 23 existing turbines being removed. Specifically, blade height for the 19 new wind turbines are 493' or 591' AGL depending on model compared to the existing 23 turbines with a blade heights of 242' and 291' AGL. SMUD does not claim that it qualifies for this exemption.

#### ESA Comment

ESA did not comment on this criterion.

#### Staff Analysis

The SMUD Solano 4 Wind Turbine Project proposes to replace existing turbines with new taller turbines and therefore **is not consistent** with this compatibility criterion.

#### Staff Conclusion and Recommendation on the Consistency with Compatibility Criteria Question

The Section 5.6.1 Criteria provide the standards for review of new wind turbine projects. As can be seen from the discussion above, neither SMUD's position, ESA comments, or the staff analysis support that the Solano 4 Wind Turbine Project is outside the line-of-sight of the Travis radar.

Consequently, staff recommends that the Commission make the following determination regarding the line-of-sight standard:

Determine that application from SMUD (ALUC-2021-03), for the Solano 4 Wind Turbine Project **is not consistent** with the Section 5.6.1 compatibility criteria set forth in the Travis Plan for wind turbines and therefore, it **is not consistent** with the Travis Plan.

**C. ELIGIBILITY FOR AN EXCEPTION TO THE COMPATIBILITY CRITERIA ISSUE**

SMUD correctly states in its referral letter that the Commission has the authority to review project submittals and can make findings in support of granting an exception to a normally incompatible use. The Travis Plan includes, in Chapter 6, sections pertaining to review procedures for consistency determinations. Section 6.2.4(c)(6) Other Special Conditions provides a process for permitting land uses which are normally considered incompatible if certain findings can be made. SMUD contends that its project is eligible for an exception from the specific compatibility criteria as provided for in Section 6.2.4 (c)(6), listed below.

“Other Special Conditions (Section 6.2.4 (c)(6))

Other Special Conditions - The compatibility criteria set forth in the Travis Plan are intended to be applicable to all locations within the AIA.

However, it is recognized that there may be specific situations where a normally incompatible use can be considered compatible because of terrain, specific location, or other extraordinary factors or circumstances related to the site.

- (i) After due consideration of all the factors involved in such situations, the ALUC may find a normally incompatible use to be acceptable.
  - (ii) In reaching such a decision, the ALUC shall make specific findings as to why the exception is being made and that the land use will neither create a safety hazard to people on the ground or aircraft in flight nor result in excessive noise exposure for the proposed use nor impact airport military operations. Findings also shall be made as to the nature of the extraordinary circumstances that warrant the policy exception.
  - (iii) The burden for demonstrating that special conditions apply to a particular development proposal rests with the project proponent and/or the referring agency, not with the ALUC.
  - (iv) The granting of a special conditions exception shall be considered site specific and shall not be generalized to include other sites nor serve as a precedent for consideration of other sites.”

Discussion of Section 6.2.4 (c)(6) Criteria

*Exception Process.*

Under the provisions of Section 6.2.4(c)(6)(i), the Commission may, because of terrain, specific location, or other extraordinary factors or circumstances related to the site, find a normally incompatible use acceptable. In summary, for the Commission to grant the exception, the Commission must make three findings based on the criteria in Section 6.2.4 (c)(6). The findings required would be:

1. Find that because of terrain, specific location, or other extraordinary factors or circumstances related to the site, an exception is warranted,
2. Find that the use will not create:
  - a. A safety hazard to people on the ground or aircraft in flight, nor
  - b. Result in excessive noise exposure for the proposed use, nor
  - c. Impact airport military operations,

3. Find that and the nature of the extraordinary circumstances warrant the policy exception.

*Evaluation of the Exception Request*

SMUD suggests in their referral letter that the Commission could grant an exception to the project based on specific circumstances. SMUD's position on how its project meets each of the required criteria of Section 6.2.4(c)(6), the ESA comments relative to each criteria and staff's analysis for each criterion in the discussions below.

1. Find that because of terrain, specific location, or other extraordinary factors or circumstances related to the site, an exception is warranted.

SMUD Position

- SMUD's position, based on their Office Memo (Attachment F), is that there is baseline interference with aerial navigation in the Project area and documents from their contractor, the FAA and Travis AFB, the ALUC can make a finding that the Project will not cause a safety hazard to aircraft in flight. Studies conducted by Capital Airspace, the Travis Air Force Base, and the Federal Aviation Administration concluded the Project will not adversely affect operations at the Base
- Impediments to aerial navigation maintained by entities other than SMUD already exist. Specifically, transmission towers onsite currently reach almost 500' in height, with planned increases by the tower owners to close to 600' feet and any incremental obstruction by wind turbines must be viewed in the context of the site's already constrained utility for aerial navigation.

ESA Comment

ESA did not address this finding specifically. ESA does comment on aspects of the terrain of the site which pertain to other sections below.

Staff Response

Staff acknowledges that the SMUD site is adjacent to other properties which contain tall objects which would impact aerial navigation by transient aircraft in the area. This fact would seem to provide the basis for exceptions to the strict application of Part 77 airspace obstructions such as the height of the turbines. In fact, the FAA has made "No Hazard Determinations" for the height of the turbines due to the presence of tall objects and the ability to make minor changes in navigational vectors.

However, the contention put forth by SMUD is not entirely relevant to the specific compatibility factor central to the project, namely, that the Solano 4 Wind Turbine Project is within the line-of-sight of the DASR Radar and will have some degree of negative impact on radar reception.

The task before the Commission is to determine if there are factors about the terrain, the location or other extraordinary factors about the site which warrant an exception to the incompatible use, which in this case is being constructed in the line-of-sight of the radar.

Staff concludes that SMUD has not demonstrated that features of "...terrain, specific location, or other extraordinary factors" exist which offset the negative impacts of being within the line-of-sight of the DASR Radar and has not met the intent of this criterion.

2. Find that the use will not 1) create a safety hazard to people on the ground or aircraft in flight, 2) nor result in excessive noise exposure for the proposed use, 3) nor impact airport military operations.

SMUD's position on each of the three factors is presented below along with the ESA comments and staff's analysis.

- a) Safety Hazard to People on the Ground or Aircraft in Flight

SMUD's Position

SMUD has not submitted information specific to safety hazard to people on the ground but has submitted documents to address factors which make the Solano 4 Wind Turbine Project eligible for an exception for aircraft in flight. As stated previously, Westslope Consulting submitted a letter which states, in part that the proposed replacement wind turbines will not impact the base's operations. The letter further states that: "Based on the number, specific locations, and height of the proposed replacement wind turbines to ensure that there will be no material difference on the performance of the DASR and STARS, and on the favorable responses from the U.S. Air Force, the DoD, and the FAA, we conclude that Solano 4 will not be a safety hazard for aircraft in flight and will not impact airport military operations. As such, we believe that the ALUC can find the planned replacement turbines as an acceptable land use that addresses the stated goals of the LUCP."

#### ESA Comment

ESA specifically commented on two documents relative to this topic.

- FAA's Determination of No Hazard (DNH): The FAA's DNHs included on Page 1,625 of the SMUD application appears to support SMUD's position that the Project would not create a safety hazard to aircraft in flight in the AIA for Travis AFB. The FAA thus determined that the Project would not be a hazard to air navigation on the condition it met certain standard requirements, including marking and lighting the WTGs in accordance with FAA Advisory Circular (AC) 70/7460-1 L Change 2, *Obstruction Marking and Lighting*.
- SMUD office memorandum addressing impediments to aerial navigation on the Solano 4 Wind Project site (as discussed in 2a (above)): The memo appears to make the argument that because there are electrical transmission towers on site that are currently almost 500 feet in height, the ability for aircraft to operate in the airspace in this area is already limited and the addition of the proposed wind turbines would provide only an incremental contribution to existing interference with air navigation.

ESA comments that it is difficult to accurately determine the location of the transmission towers relative to the Project sites based on the maps provided in the SMUD application. A review of the Project map included in the application as well as other aerial mapping sources (i.e., Google Earth) appears to indicate that the transmission towers are actually located at some distance from the Project sites. The two transmission towers south of the Solano 4 East site appear to be located approximately two miles to the south of the nearest proposed wind turbine. The single transmission tower located near the Solano 4 West site appears to be located approximately one mile to the east of the proposed wind turbine.

Neither the Westslope letter nor the SMUD office memorandum or their attachments speak to potential safety impacts to people on the ground.

#### Staff's Analysis

Staff acknowledges that the site has specific locational factors as outlined in the SMUD Office Memo (See Attachment F), which support a claim that the SMUD turbines do not represent a significant physical obstruction hazard due to the presence of other taller objects on lands adjacent to SMUD's site. The FAA concurs by virtue of its NHD for the SMUD turbines. However, as noted previously, obstructions to flight are not a criterion being raised by the project. Staff concludes that the project does not pose a threat to the safety of aircraft in flight. However, the proposed project will, as stated by Westslope, interfere with the Travis AFB Digital Airport Surveillance Radar (DASR).

#### b) Excessive Noise to People on the Ground

##### Staff's Analysis

Given the remote location of the Solano 4 Wind Turbine Project and that it will not cause diversion of aircraft to other populated areas, staff recommends that the Commission determine that the proposed use will not result in excessive noise exposure nor be impacted by noise from overflights by transient aircraft.

#### c) Impact Airport Military Operations

##### SMUD Position

SMUD has submitted copies of letters from the 60<sup>th</sup> Air Mobility Wing (AMW) and the Office of the Assistant Secretary of Defense in support of their contention that the Solano 4 Wind Turbine Project will not impact military

operations.

The 60<sup>th</sup> Air Mobility Wing letter states:

- Solano 4 does not meet the wind turbine facility requirements outlined in the Travis Plan adopted in October 2015.
- Air Traffic Control radar interference studies conducted by the Air Force Flight Standards Agency and the North American Aerospace Defense Command indicate the proposed replacement of 82 aging wind turbines with 19 newer turbines will not improve the Digital Airport Surveillance Radar's probability of detection capability within the Wind Resource Area.
- As proposed, Solano 4 Wind Project should have minimal negative impact on Travis AFB operations.
- Any changes to the Solano 4 Wind Project will require a new operational risk analysis.

The Office of the Assistant Secretary of Defense letter thanks SMUD for participating in the Mitigation Response Team (MRT) to assess and overcome military impacts from SMUD's proposed Solano 4 wind farm project and states that as a result of discussions between SMUD and the U.S. Air Force, the Project will not present an adverse impact to military operations.

#### ESA Comment

ESA commented that the documents submitted by SMUD appear to support SMUD's position that the Project would not impact airport military operations in the AIA for Travis AFB. These documents include:

- The Westslope letter stating modeling was used to identify the number and specific locations of the wind turbines to ensure that there will be no material difference on the performance of various radar systems, including the DASR, Travis AFB's tracking and display system, the Standard Terminal Automation Replacement System (STARS) and Travis AFB's key radar system used for air traffic control, the Monopulse Secondary Surveillance Radar (MSSR) which is co-located with the Travis AFB DASR.
- The operational risk assessment letter from the 60th Air Mobility Wing (AMW).
- The resolution letter from the Department of Defense's Office of the Assistant Secretary of Defense, Military Aviation and Installation Assurance Siting Clearinghouse as attachments.

#### Staff Analysis

Notwithstanding that the 19 new wind turbines will be in the line-of-site and interfere with or will not improve the Travis AFB's DASR probability of detection capability within the Wind Resource Area, Staff agrees with the 60<sup>th</sup> Air Mobility Wing letter that they should have minimal negative impact on Travis AFB operations.

3. Find that and the nature of the extraordinary circumstances related to the site warrant the policy exception.

#### SMUD Position

SMUD does not specifically state which information submitted addresses an extraordinary circumstance that warrants a policy exception. SMUD does reference in general two letters which have been previously discussed in this report:

- The March 11, 2021 letter from Westslope Consulting, LLC, which discusses that the number and location of the wind turbines were chosen to ensure no material difference in DASR and STARS radar performance and favorable responses from the U.S. Air Force, the DoD, and the FAA.
- SMUD's Memorandum to File discussing locational conditions affecting the property, namely the existing transmission towers near the Project.

#### ESA Comment

The Travis Plan does not define what constitutes "extraordinary circumstances", this is at the discretion of the ALUC. ESA did comment that based on their review of the application packet, SMUD does not appear to explicitly identify any factors as "extraordinary circumstances" applicable to the Project.

#### Staff's Analysis

The project will be situated within the line-of-sight of the Travis AFB Digital Air Surveillance Radar, which is utilized to provide air traffic control services to the FAA for a civilian aircraft flying in this specific sector of the National Airspace. In this particular airspace, civilian aircraft are not required to have operating transponders or other equipment that would permit the operator to be aware of other traffic in the area and such civilian aircraft are reliant on air traffic control for this service. Wind turbines create challenges for air traffic control systems such as false returns, excessive clutter, and false radar tracks. To date, there is no effective remedy for their interference. The Department of Defense and the Federal Aviation Administration have implemented a Pilot Mitigation Program at Travis AFB, which seeks to find a solution to the negative impacts on radar caused by the existing wind turbines by utilizing “gap fill” radar units to augment the DASR equipment (See Attachment D). While the technology appears promising, to date, no solution has been identified, tested and certified by the FAA for use in surveillance of the national airspace.

To address impacts to Travis AFB radar from wind turbines, as stated in the Travis Plan, the Commission has determined that any new wind turbines within the line-of-sight of the radar installation add to the cumulative negative impacts to the radar. For this reason, the ALUC incorporated the line-of-sight standard for new wind turbines into the Travis Plan with the intent that the long-term effect would be to reduce the number of wind turbines visible by the DASR radar and thus begin reclaiming lost probability of detection.

Staff maintains that the threshold for granting an exception based on the nature of the extraordinary circumstances should be whether the wind turbine project mitigates the impact caused by wind turbine interference so that there is either no degradation of radar reception, or that some degree of improvement in radar reception will be attained. Although SMUD has submitted several letters and reports addressing the radar, none have offered sufficient quantitative analysis of the impact to radar before and after the construction of the entire project given that the turbines are in the line-of-site of the DASR.

Staff recommends that the Commission find that SMUD has not presented information to support an extraordinary factors exemption from the line-of-sight standard for the Solano 4 Wind Turbine Project.

#### **D. PROJECT ENVIRONMENTAL REVIEW**

SMUD is preparing an Environmental Impact Report for the Solano IV Wind Project. A Draft EIR was circulated to the public for review in 2019. On September 6, 2019, the ALUC submitted comments on the Draft EIR. The comment letter addressed both the ALUC jurisdictional issue as well as the aspects of radar impacts and is included as an attachment for the Commission’s consideration (See Attachment I).

#### **E. SUMMARY and RECOMENDATION**

Based on the analysis above, staff recommends that the Solano County Airport Land Use Commission make the following determinations:

**Determination:** Determine that application from SMUD (ALUC-2021-03), for the Solano IV Wind Turbine Project:

1. **Is not consistent** with the Section 5.6.1 compatibility criteria set forth in the Travis Plan for wind turbines, and
2. **Does not** meet the requirements for an exception under Section 6.2.4 (c)(6) Other Special Conditions.

#### **F. ALTERNATIVES**

The Commission could make findings that the exception could be granted based upon review of the information submitted to date or information and testimony submitted at the meeting. The Travis Plan provides discretion on what constitutes extraordinary factors or circumstances that could prove to be the basis for consideration of an exception. Should the Commission choose to make a finding to grant an exception, substantive evidence specific to this Project would need to be included in the record to support the finding.

#### **Attachments**

Attachment A: Complete Submittal Package  
Attachment B: Application Only  
Attachment C: SMUD Referral Letter  
Attachment D: Travis Pilot Mitigation Program  
Attachment E: Westslope Consulting letter  
Attachment F: SMUD Office Memo  
Attachment G: 60<sup>th</sup> Air Mobility Wing letter  
Attachment H: Office of the Assistant Secretary of Defense letter  
Attachment I: Letter to A. Rice- SMUD  
Attachment J: Solano County ALUC SMUD Consistency Analysis Memo  
Attachment K: Resolution (To Be Distributed by Separate Cover)