



# draft memorandum

date May 6, 2021

to James Leland, Principal Planner

cc

from Chris Jones, AICP, Principal Associate

subject Travis LUCP Consistency Analysis – SMUD Solano 4 Wind Project

## Introduction

The Solano County Airport Land Use Commission (ALUC) has requested that Environmental Science Associates (ESA) review the Solano 4 Wind Project, proposed by the Sacramento Municipal Utilities District (SMUD), for consistency with the policies provided in the Travis Air Force Base Land Use Compatibility Plan (LUCP). The SMUD's project is located in the Airport Influence Area (AIA) for Travis Air Force Base, and SMUD has filed an application for a consistency determination with the Solano County ALUC. This memorandum documents the results of ESA's review.

## Project Description

The SMUD proposes to develop a wind energy project, Solano 4 Wind Project (Project), in southern Solano County. The Project comprises two distinct sites, Solano 4 East and Solano 4 West, as well as collection and generation feeder circuits connecting these areas to an existing electrical substation. Solano 4 East is located approximately five miles southwest of the city of Rio Vista and Solano 4 West is located approximately eight miles southwest of the city of Rio Vista. The feeder circuits would run along land subject to easements issued to SMUD. The Project includes the following components:

- Decommissioning and removing 23 existing wind turbine generators (WTGs), across the Solano 4 East site;
- Constructing up to 19 new WTGs (nine WTGs at the Solano 4 East site and 10 WTGs at the Solano 4 West site), as well as the associated electrical collection system, access roads, and minor upgrades to the existing Russell Substation; and
- Construction of two meteorological towers, one of which will be located at the Solano West site and one at the Solano East site. The towers will be approximately 105 meters (345 feet) in height above ground level (AGL).

The replacement WTGs have not yet been selected by SMUD. As required by federal regulations (14 Code of Federal Regulations [C.F.R.] Part 77, the Project Proponent submitted a Form 7460-1, *Notice of Proposed*

*Construction or Alteration*, to the Federal Aviation Administration (FAA), prompting preparation of an aeronautical study to determine if the Project would constitute a hazard to aviation. Upon completion of the aeronautical study, the FAA issued a “Determination of No Hazard” assuming a maximum height of 591 feet AGL. The Project Proponent has committed to selecting WTGs with a maximum height of 591 feet. This would represent towers up to 345 feet in height with turbine rotors no greater than 492 feet in length (the radius of the turbine rotor is 246 feet plus a tower height of 345 feet equaling a maximum height of 591 feet). The project proponent states that actual tower height would range from 269 feet to 345 feet in height. It is assumed based on the information provided, that the Project WTGs will be substantially larger than the WTGs currently in place.

## Issues

SMUD has filed an application for a consistency determination with the Solano County ALUC. In support of its application, SMUD has provided more than 2,100 pages of documentation, including all documentation required by the ALUC in its consistency determination application. The Solano County ALUC has requested that ESA evaluate the Project for consistency with the policies in the Travis Air Force Base LUCP. In addition, the ALUC has requested ESA’s assistance in determining the Project’s eligibility for an exemption from the strict application of the compatibility criteria in the LUCP pursuant to LUCP Section 6.2.4 (c)(6). The following sections discuss each of these topics in detail.

### **Consistency with the Policies in the Travis Air Force Base LUCP**

The Project is largely located in Compatibility Zone D. A small portion of the Solano 4 West project site is located in Compatibility Zone E. The applicable compatibility criteria in Compatibility Zone D are:

- ALUC review required for objects > 200 feet AGL
- All proposed wind turbines must meet line-of-sight criteria in Policy 5.6.1(b)
- All new or expanded meteorological towers > 200 feet AGL, whether temporary or permanent, require ALUC review

The applicable compatibility criteria in Compatibility Zone E are:

- Airspace review required for objects > 200 feet AGL
- All proposed wind turbines must meet line-of-sight criteria in Policy 5.6.1(b)
- All new or expanded meteorological towers > 200 feet AGL, whether temporary or permanent, require ALUC review

Policy 5.6.1(b) states:

No wind turbine greater than 100 feet in height AGL shall be within a line-of-sight of the Travis AFB Digital Airport Surveillance Radar (DASR) Radar Installation. All commercial and non-commercial wind turbine facilities greater than 100 feet in height 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. The line-of-sight method used in such analysis shall, at a minimum, be performed using a standard curvature of the earth radar beam assessment model to provide an accurate radar line-of-sight. A discussion of the methodology and assumptions that are to be used in the line-of-sight analysis is found in Appendix H.

This requirement applies throughout the AIA (and is advisory outside of Solano County). The five example line-of-sight depictions presented in Appendix H of this LUCP do not show the boundary of the area within which the line-of-sight requirement applies, but rather depict a shaded area

(labeled “viewshed” on the Legend) which illustrates, at a large scale, approximately where wind turbines that are 100 feet, 200 feet, 300 feet, 400 feet, and 500 feet in height AGL, respectively, would likely be within the line-of-sight of the Travis AFB DASR Radar Installation. Conversely, the remaining areas that are not shaded as “viewshed” are areas where wind turbines of the specified heights are not likely to be within the line-of-sight of the Travis AFB DASR Radar Installation.

The Project includes wind turbines and meteorological towers that would be greater in height than 200 feet AGL. Based on the compatibility criteria applicable in Compatibility Zones D and E, the Project is subject to ALUC review.

Policy 5.6.1(b) states that no wind turbine greater than 100 feet in height AGL shall be within a line-of-sight of the Travis AFB DASR Radar Installation. A letter from Westslope Consulting included with the application for a consistency review states “the proposed development will be within line-of-sight of and will interfere with the Travis AFB Digital Airport Surveillance Radar (DASR).” As the Project would be within line-of-sight of the DASR radar installation, it would not be consistent with this criterion applicable in both Compatibility Zones D and E.

**Eligibility for an exemption from the strict application of the compatibility criteria pursuant to Section 6.2.4 (c)(6) of the Travis Air Force Base LUCP**

The SMUD’s cover letter included with the consistency determination application acknowledges that the Project is inconsistent with the line-of-site criteria provided in Policy 5.6.1(b) and points out that under Policy 6.2.4(c)(6), the ALUC has the discretion to recognize “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.” Policy 6.2.4(c)(6)(iii) states that “(t)he 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.” This means an applicant bears the burden of persuading the ALUC that special conditions apply to its proposed development and submitting documentation that supports this argument. In reaching its decision, the ALUC is obligated to “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.” (Policy 6.2.4(c)(6)(ii). The documentation supplied by the applicant appears to be focused on supporting the points to be addressed in the ALUC’s findings.

As part of its application, SMUD provides two documents to support making these findings. The first document is a letter dated March 11, 2021 from Westslope Consulting raising several key points for consideration by the ALUC in their review of the project. Most important among these points is that “modeling of the replacement wind turbines was conducted to identify a number and specific locations of the wind turbines to ensure that there will be no material difference on the performance of the DASR and on Travis AFB’s tracking and display system, the Standard Terminal Automation Replacement System (STARS) and that 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, will not be affected.” To support this statement, Westslope’s letter cites a copy of an operational risk assessment letter from the 60th Air Mobility Wing (AMW) and a resolution letter from the Department of Defense’s Office of the Assistant Secretary of Defense, Military Aviation and Installation Assurance Siting Clearinghouse as attachments. These documents are not attached to the letter; however, the letter from the 60<sup>th</sup> AMW appears to be included with the application packet. A letter from Colonel Corey A. Simmons, Commander of the 60<sup>th</sup> AMW, dated January 11, 2021 is included on Page 2,116 of the application packet and states that as proposed the Solano 4 Wind Project would have minimal negative impact on Travis AFB operations. A letter from the Department of Defense’s Office of the Assistant Secretary of Defense, Military Aviation and Installation Assurance Siting Clearinghouse, dated February 9, 2021, is included on Page 2,123 of the application packet.

This letter states that “the construction of the Solano 4 wind project, submitted to the Federal Aviation Administration on 04/17/2020, will not present an adverse impact to military operations.” These documents support SMUD’s position that the Project would not impact airport military operations in the AIA for Travis AFB.

Westslope’s letter also notes that the FAA issued Determinations of No Hazard (DNHs) for the WTGs on February 1, 2019 and cites these as attachments to its letter. The DNHs are not attached to the letter; however, A DNH, dated February 1, 2019, is included on Page 1,625 of the application packet. The DNH states that the results of the FAA’s aeronautical study indicate that the Project would have “no substantial adverse effect on the safe and efficient utilization of the navigable airspace by aircraft or on the operation of air navigation facilities.” 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*. It should be noted that the DNHs expired in August 2020. Regardless, this document supports SMUD’s position the Project would not create a safety hazard to aircraft in flight in the AIA for Travis AFB.

The second document is a SMUD office memorandum addressing impediments to aerial navigation on the Solano 4 Wind Project site. The memo appears to make the argument that because there are electrical transmission towers on site that are 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 WTGs would provide only an incremental contribution to existing interference with air navigation. Included with this memorandum is an undated (presumed to be March 2021) “Notice of Proposed Construction” issued by the California Public Utilities Commission (CPUC) announcing that Pacific Gas & Electric company (PG&E) has been directed by the Army Corps of Engineers (ACOE) to increase the height of the electrical transmission towers; a letter dated November 12, 2011 providing a response from the California Independent System Operator to a request by PG&E to extend the commercial operation date of the Collinsville Wind Project to December 31, 2014; the FAA’s “Determination of No Hazard”, dated February 25, 2020 (incorrectly identified as February 25, 2021 in the memorandum), for the four electrical tower structures, including a topographical map and an airspace sectional map depicting latitude/longitude coordinates provided in a Form 7460-1, *Notice of Proposed Construction or Alteration*, filed with the FAA. Also attached is a sectional map marked by hand depicting what is assumed to be the locations of the proposed WTGs. The transmission towers are shown on the sectional map as inverted Vs (or an M where two towers are located close together). The maps included with this document inadequately depict the location of the transmission towers relative to the Project sites. A review of the Project map included in the consistency determination application as well as other aerial mapping sources (e.g., 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. The single transmission tower located near the Solano 4 West site appears to be located approximately one mile to the east. These towers would appear to be located of sufficient distance from the Project sites that the argument made in the memorandum does not appear wholly supported. The memorandum should provide better mapping depicting the locations of the transmission towers relative to the Project sites and proposed WTGs. The memorandum should also better address the relationship between these obstructions into the airspace and potential interference with Travis AFB Radar. Regardless, the potential effects to air navigation are already addressed in the Westslope letter and the argument being made in this document would appear to be redundant.

Neither the Westslope letter nor the SMUD office memorandum or their attachments speak to potential safety impacts to people on the ground or excessive noise exposure; however, beyond the requirement for a deed notice regarding aircraft operational impacts applicable in Compatibility Zone D (see Section 4.6.2 of the AFB LUCP), there are no noise and safety criteria applicable to people or buildings on the ground in Compatibility Zones D and E.

In addition to these documents, the application packet includes an email announcing publication of the Draft Environmental Impact Report (EIR) (the Notice of Availability is identified as an attachment, but is missing from this submittal), and the Draft EIR, including appendices, from July 2019. The Draft EIR does not appear to properly evaluate the Project relative to the LUCP policies. The assumptions that lead to the inadequate analysis in the Draft EIR are reiterated in the cover letter submitted with the consistency determination application. However, the comment letter on the Draft EIR prepared by Shute Mihaly & Weinberger, dated September 6, 2019, comprehensively addresses this issue and these are factors that extend beyond the scope of this analysis

## **Conclusions**

Per the Travis Air Force Base LUCP compatibility criteria for Compatibility Zones D and E, the Project is subject to ALUC review for consistency with LUCP policies. The Project is not consistent with the line-of-sight criteria included in LUCP Policy 5.6.1(b).

Under LUCP Policy 6.2.4(c)(6) it is within the ALUC's discretion to determine that an incompatible use is compatible based on extraordinary factors or circumstances related to the site. However, under Policy 6.2.4(c)(6)(iii), the burden of proof lies with the project proponent and not with the ALUC. To meet this burden, SMUD has provided documents that demonstrate that although the project is not consistent with the line-of-sight criteria included in LUCP, it would have minimal negative impact on Travis AFB operations. SMUD has also provided Determinations of No Hazard issued by the FAA stating that the Project would have "no substantial adverse effect on the safe and efficient utilization of the navigable airspace by aircraft or on the operation of air navigation facilities." The FAA thus determined that the Project would not be a hazard to air navigation. These documents are persuasive in supporting the position that special conditions apply to the proposed development.