Sacramento Municipal Utility District
Solano 4 Wind Project

Final Environmental Impact Report • July 2021
State Clearinghouse #2019012016

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July 2021

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Acronyms and Abbreviations

AB	Assembly Bill
ACC	Advanced Clean Car Program
ADLS	Asymmetric Digital Subscriber Line
AFB	Air Force Base
ALUC	Airport Land Use Commissions
APE	Area of Potential Effect
APP	Avian Protection Plan
ARB	California Air Resources Board
ASTM	American Society for Testing and Materials
ATV	all-terrain vehicle
BAAQMD	Bay Area Air Quality Management District
BBCS	Bird and Bat Conservation Strategies
BMP	best management practice
BO	biological opinion
Board	Board of Directors
CalEEMod	California Emissions Estimator Model
CARB	California Air Resources Board
Caltrans	California Department of Transportation
CCR	California Code of Regulations
CDFA	California Department of Food and Agriculture
CDFG	California Department of Fish and Game
CDFW	California Department of Fish and Wildlife
CEC5	California Energy Commission
CERS	California Environmental Reporting Systems
CESA	California Endangered Species Act
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CNDDB	California Natural Diversity Database
CRPR	California Rare Plant Rank
CTS	California tiger salamander
CURE	California Unions for Reliable Energy
CV	Central Valley
CWA	Clean Water Act

DHS	Department of Homeland Security
DNH	Determinations of No Hazard
DOD	Department of Defense
DOGGR	California Department of Conservation, Division of Oil, Gas and Geothermal Resources
Draft EIR	draft environmental impact report
EIR	environmental impact report
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
ESAs	environmentally sensitive areas
FAA	Federal Aviation Administration
FDCP	fugitive dust control plan
Final EIR	final environmental impact report
ft	feet
GHG	greenhouse gas
HDD	horizontal directional drilling
HMBP	hazardous materials business plan
HRA	health risk assessment
HSCERP	Hazardous Substance Control and Emergency Response Plan
ITP	incidental take permit
LED	light-emitting diode
LUPC	Land Use Planning Commission
m	meter(s)
MM	Mitigation Measure
MMRP	mitigation monitoring and reporting program
mph	miles per hour
MRT	Mitigation Response Team
MBTA	Migratory Bird Treaty Act
$MTCO_2e$	metric tons of carbon dioxide equivalent
MWh	megawatt hours
NAHC	Native American Heritage Commission
NAS	National Airspace System
NOTAM	Notice to Airmen
NOP	notice of preparation
NO_X	oxides of nitrogen

NPH	Notice of Presumed Hazard
NPDES	National Pollutant Discharge Elimination System
OEHHA	Office of Environmental Health Hazards Assessment
PHEV	plug-in hybrid electric vehicle
OSHA	Occupational Health and Safety Administration
PM	particulate matter
PM_{10}	fine particulate matter
PV	photovoltaic
PRC	Public Resources Code
ROG	reactive organic gases
RWQCB	Regional Water Quality Control Board
SAA	State Aeronautics Act
SCADA	supervisory control and data acquisition
SCEMD	Sacramento County Environmental Management Department
SFB	San Francisco Bay
SMAQMD	Sacramento Metropolitan Air Quality Management District
SMUD	Sacramento Municipal Utility District
SOC	Statement of Overriding Considerations
SOW	Scope of Work
SPCC	Spill Prevention, Control, and Countermeasure
SR	State Route
SWAPE	Soil/Water/Air Protection Enterprise
SWPPP	stormwater pollution prevention plan
SWRCB	State Water Resources Control Board
TAC	Technical Advisory Committee
TCR	tribal cultural resource
the Board	SMUD Board of Directors
UAIC	United Auburn Indian Community of the Auburn Rancheria
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
VOC	volatile organic compound
WEAP	worker environmental awareness program
WTG	wind turbine generator
YSAQMD	Yolo-Solano Air Quality Management District
ZEV	Zero-Emission Vehicle

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1 Introduction

On July 22, 2019, the Sacramento Municipal Utility District (SMUD) released for public review the draft environmental impact report (Draft EIR) for the proposed Solano 4 Wind Project (project). SMUD proposes to:

- decommission existing wind turbine generators (WTGs) at the project site;
- construct new, more technologically advanced WTGs;
- construct an associated electrical collection system, and access roads;
- implement minor upgrades to the existing Russell Substation; and
- operate and maintain the new WTGs.

1.1 Public Review and Response to Comments

In accordance with Sections 15087 and 15105 of the State CEQA Guidelines, the Draft EIR was circulated for public review and comment to lead and responsible agencies, as well as members of the public, for 45 days (July 22, 2019 through September 6, 2019). SMUD also held a public meeting on August 20, 2019 to receive comments on the Draft EIR. Written comment letters received on the Draft EIR are provided in their entirety in Chapter 2, “Comments and Responses to Comments.”

Responses to each of the comments received are provided in this document as part of the final environmental impact report (Final EIR). Although some of the comments have resulted in changes to the text of the Draft EIR (see Chapter 3, “Corrections and Revisions to the Draft EIR”), none of the changes constitute “significant new information,” which would require recirculation of the Draft EIR. Significant new information is defined in Section 15088.5(a) of the State CEQA Guidelines as follows:

> (1) A new significant environmental impact would result from the project or from a new mitigation measure proposed to be implemented.
>
> (2) A substantial increase in the severity of an environmental impact would result unless mitigation measures are adopted that reduce the impact to a level of insignificance.
>
> (3) A feasible project alternative or mitigation measure considerably different from others previously analyzed would clearly lessen the environmental impacts of the project, but the project’s proponents decline to adopt it.
>
> (4) The Draft EIR was so fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were precluded.

None of these circumstances has arisen from comments on the Draft EIR; therefore, recirculation is not required.

The Draft EIR, Final EIR, and associated appendices are available for review online at: https://www.smud.org/CEQA and at the following locations:

Sacramento Municipal Utility District
Customer Service Center
6301 S Street
Sacramento, CA 95817

Sacramento Municipal Utility District
East Campus Operations Center
4401 Bradshaw Road
Sacramento, CA 95827

As required by State CEQA Guidelines Section 15088(b), SMUD has provided a printed or electronic copy (through SMUD's website; see prior discussion) to each public agency that submitted written comments on the Draft EIR with written responses to that public agency's comments at least 10 days prior to certifying the Final EIR.

1.2 Organization of the Responses to Comments

Chapter 2 of the Final EIR consists of the written comments received on the Draft EIR and presents responses to environmental issues raised in the comments (as required by State CEQA Guidelines Section 15132). The focus of the responses to comments is on the disposition of significant environmental issues that are raised in the comments, as required by Section 15088(c) of the State CEQA Guidelines.

Each comment letter has been reproduced with individual comments bracketed and numbered. Responses to the comments follow each letter. For example, the response to the second comment of the first letter would be indicated as Response to Comment 1-2. In some instances, clarifications of the text of the Draft EIR may be required. In those cases, the text of the Draft EIR is revised and the changes compiled in Chapter 3, "Corrections and Revisions to the Draft EIR," to the Draft EIR. The text deletions are shown in strikeout (~~strikeout~~) and additions are shown in double underline (<u>double underline</u>).

1.3 FAA Compliance Process and Ongoing Federal Coordination

The United States Congress charged the Federal Aviation Administration (FAA) with the responsibility to encourage air commerce in the United States. As part of this responsibility, the FAA is tasked with ensuring air safety and preserving the National Airspace System (NAS). It is through these mandates that the FAA draws its authority to conduct aeronautical studies of tall structures including wind turbines (Aeronautical Study Process, Capitol Airspace Group 2018).

There are eight offices internal to the FAA. In addition, the Department of Defense (DOD), Army, Navy, Air Force and the Department of Homeland Security (DHS) take part in the aeronautical study process. The DoD formal review process occurs concurrently with FAA's aeronautical study. Technicians in each office review each proposed tall structure

location to ensure that the planned structure does not interfere with their areas of responsibility. Once all offices have responded, the airspace specialist, typically a former air traffic controller, assesses all of the responses and subsequently determines whether the planned structure exceeds the imaginary surfaces established under 14 CFR Part 77, Sections 77.17, 77.19 and 77.21. Structures that do not exceed these surfaces are, in most cases, issued favorable Determinations of No Hazard (DNH). Structures that exceed these surfaces are generally issued a Notice of Presumed Hazard (NPH). A NPH letter is meant to be a means for the FAA to notify the developer that the FAA has identified an issue that will require further study to determine whether or not the structure will pose a hazard to air navigation. Typically, the FAA also includes in this letter any objections received by the various responding offices in the FAA, DOD and DHS. If a military objection is raised, due to potential for impact on radar surveillance systems, for example, a Mitigation Response Team (MRT) may be formed. This team would include representatives from any potentially affected air force base. The MRT conducts detailed analyses and, if necessary, negotiates mitigation options with the structure developer. If mitigation options are identified and agreed upon, the Mitigation Oversight Committee will review the solutions (Aeronautical Study Process, Capitol Airspace Group 2018).

It is through the public comment period that the FAA collects information regarding the potential extent of any actual impact of the structure on local flights. Once the comment period closes, the FAA will collect all comments, discard those that are not of valid aeronautical nature, and proceeds to make a final decision. The FAA will issue a Determination of Hazard to Air Navigation when the aeronautical study concludes that the proposed construction or alteration will exceed an obstruction standard and would have a substantial aeronautical impact. The FAA will issue a Determination of No Hazard to Air Navigation when a proposed structure does not exceed any of the obstruction standards and would not be a hazard to air navigation. A Determination of No Hazard to Air Navigation will also be issued when the aeronautical study concludes that the proposed construction or alteration will exceed an obstruction standard but would not have a substantial aeronautical impact to air navigation and may include the following: conditional provisions of a determination, limitations necessary to minimize potential problems, such as the use of temporary construction equipment, supplemental notice requirements, when required, and marking and lighting recommendations, as appropriate. (Aeronautical Study Process, Capitol Airspace Group 2018).

On February 8, 2018, SMUD started meeting with Travis Air Force Base (AFB) to discuss the Solano 4 Wind Project and associated environmental review and project planning processes, project schedule, and studies to be prepared (radar impact study and an obstruction evaluation and airspace analysis). SMUD also met with Solano County on February 28, 2018 to share the same information. Since the February 8, 2018 meeting with Travis AFB, SMUD met with Travis AFB on five separate occasions to discuss the project, including the radar impact study and obstruction evaluation and airspace analysis. SMUD filed applications with the FAA on October 10, 2018 and on February 2, 2019 received separate Determinations of No Hazard to Air Navigation for nineteen (19) Solano 4 turbines with conditions related to marking and lighting. The determinations were subject to third party petitions received by March 3, 2019. While an attorney filed a

letter on behalf of the Airport Land Use Commission (ALUC), the FAA determined that the letter was not an objection, but constituted a series of statements. The third-party submittal period ended, and the determinations became final on March 13, 2019. SMUD notified Travis AFB on April 14, 2020 that SMUD had started the process with the FAA to request extensions for the nineteen (19) DNHs received for the Solano 4 Wind Project. On September 28, 2020 SMUD met with Colonel Simmons of Travis AFB to discuss the project. Key take-away messages from this meeting included Colonel Simmons' request that SMUD continue working with the county and ALUC as part of the FAA DNH extension. It was also stated that Travis AFB would participate in the FAA process, would conduct independent studies, and that Travis AFB would like to understand the cumulative effect of future repowering/development on radar systems. As Travis AFB worked through its own technical evaluation, SMUD scheduled bi-weekly meetings with Travis AFB to provide support and receive updates. These meetings continued until Travis AFB concluded its study. Travis submitted its Solano 4 Wind Project Operational Risk Assessment to the DOD on January 11, 2021. SMUD received the requested extensions for the nineteen (19) DNH for the Solano 4 Wind Project on January 28, 2021, and a letter dated February 9, 2021 from Steven J. Sample, Executive Director, Military Aviation and Installation, Assurance Siting Clearinghouse stating that as a result of its study of the potential impact of SMUD's proposed project, it will not present an adverse impact to military operations (See FAA Determinations in Appendix G of the DEIR and Appendix B of this FEIR).

1.4 Comments that Require Responses

Section 15088(c) of the State CEQA Guidelines specifies that the focus of the responses to comments shall be on the disposition of significant environmental issues. Responses are not required on comments regarding the merits of the project or on issues not related to the project's environmental impacts. Comments on the merits of the proposed project or other comments that do not raise environmental issues will be reviewed by SMUD's Board of Directors (the Board) before an action is taken on the project. The responses address environmental issues and indicate where issues raised are not environmental or address the merits of the project. In the latter instance, no further response is provided.

1.5 Project Decision Process

This document and the Draft EIR together constitute the Final EIR, which will be considered by the Board before a decision on whether to approve the project. If the Board decides to approve the project, it must first certify that the Final EIR was completed in compliance with CEQA's requirements, was reviewed and considered by the Board, and reflects the Board's independent judgment and analysis, as required by State CEQA Guidelines Section 15090. The Board then would be required to adopt findings of fact on the disposition of each significant environmental impact, as required by State CEQA Guidelines Section 15091. If significant and unavoidable impacts (those that cannot be mitigated to a less-than-significant level) would result from the project and the Board chooses to approve the project, the Board would need to adopt a statement of overriding

considerations, pursuant to State CEQA Guidelines Section 15093, explaining the overriding factors that the Board deems allow the project to move forward. Implementing air quality mitigation measures would reduce emissions associated with project construction. However, even after implementation of the recommended mitigation measures, the project's construction emissions would exceed applicable thresholds during certain months of construction. Therefore, this short-term construction impact would be significant and unavoidable and therefore will require a Statement of Overriding Considerations (SOC) from the Board. In the SOW, the SMUD Board states in writing the specific reasons to support its action based on the Final EIR and/or other information in the record. The SOW will be included in the Notice of Determination (California Code of Regulations 15093 (b)) that will be filed with the State Clearinghouse upon project approval by the Board. A Mitigation Monitoring and Reporting Program, which is required by CEQA Guidelines Section 15091(d), has been prepared and is included in Chapter 4 of this Final EIR.

1.6 Revisions to the Draft EIR

As discussed in Section 1.1, "Public Review and Response to Comments," above, CEQA requires recirculation of an EIR when the lead agency adds "significant new information" to an EIR, regarding changes to the project description or the environmental setting, after public notice is given of the availability of a draft EIR for public review under State CEQA Guidelines, California Code of Regulations (CCR) Section 15087, but before EIR certification (State CEQA Guidelines CCR Section 15088.5[a]). Recirculation is not required unless the EIR is changed in a way that would deprive the public of the opportunity to comment on significant new information, including a new significant impact in which no feasible mitigation is available to fully mitigate the impact (thus resulting in a significant and unavoidable impact), a substantial increase in the severity of a disclosed environmental impact, or development of a new feasible alternative or mitigation measures that would clearly lessen environmental impacts but that the project proponent declines to adopt (State CEQA Guidelines CCR Section 15088.5[a]). Recirculation is not required when the new information added to the EIR merely clarifies or amplifies or makes insignificant modifications in an adequate EIR (State CEQA Guidelines CCR Section 15088.5[b]).

All revisions to the Draft EIR were minor and would not change any of the impact conclusion presented in the Draft EIR. Therefore, recirculation of the EIR would not be required.

1.6.1 Tribal Consultation

Assembly Bill (AB) 52 requires that lead agencies undertaking CEQA consult with California Native American Tribes upon the tribes' written request, and evaluate in the EIR the potential for projects to affect tribal cultural resources. Section 3.4, "Archaeological, Historical, and Tribal Cultural Resources," of the Draft EIR describes the consultation that has occurred between the tribes and SMUD pursuant to AB 52. Specific

language requested by the tribes was incorporated in the Draft EIR prior to circulation, and consultation has been completed.

2 Comments and Responses to Comments

2.1 Master Response: Land Use and Safety Concerns Related to Project Siting

Several commenters submitted letters disagreeing with SMUD's interpretation of its authority under Government Code section 53091(d) and (e) and asserting that the DEIR was not sufficiently detailed with regards to SMUD's assertion that SMUD is not required to obtain a consistency determination from ALUC for project approval and that further analysis was needed. Commenters also expressed concern regarding potential significant impacts to airport-related land use and safety. They suggested additional information was necessary to ensure that the public and decisionmakers are properly informed and can conduct a meaningful evaluation of the way project impacts were avoided, minimized, or mitigated. The following responses address these issues by topic.

LAND USE

As described in more detail below, SMUD maintains that the Solano 4 Wind Project does not require Airport Land Use Commission Approval (ALUC) approval for the following reasons: 1) Electrical generation/production facilities are exempt from a county's building and zoning ordinances under California Government Code Section 53091, subdivisions (d) and (e); 2) The Federal Aviation Administration (FAA) finding of no significant hazard for the project preempts the ALUC regulations under the Travis Air Force Base (AFB) LUCP regarding air safety, including radar interference (Appendix G FAA Determination); 3) The ALUC does not have authority to review individual projects, such as SMUD's Generation Project, under the State Aeronautics Act, and; 4) Even if the ALUC regulations were to apply to the project, SMUD, as a local agency, has the authority to overrule any ALUC determination of inconsistency under the SAA and the evidentiary record provides justification for doing so.

Please also refer to Downey Brand's letter dated April 26, 2019 in response to the Solano County ALUC comments on SMUD's Notice of Preparation (NOP) for Solano 4 Wind Project included in Appendix C of this FEIR for additional information regarding SMUD's position on this issue.

1. Even if the LUCP were to apply, which it does not, the Solano 4 Wind Project would be exempt from ALUC review because an energy generating/production facility is exempt from a county's zoning and building ordinances under Government Code Section 53091.

SMUD's wind turbine facilities are exempted from the ALUC provisions because under subdivisions (d) and (e) of Section 53091 of the Government Code, the zoning and building ordinances of a county or city shall not apply to the location or construction of facilities for the generation of electrical energy. SMUD, as a municipal utility district, is a local agency for purposes of Section 53091. (See *City of Lafayette v. East Bay Municipal Utilities District* (1993) 16 Cal.App.4th 1005, 1012; 78 Ca1.Atty.Gen.Ops. 31 (1995); see also *Center for Biological Diversity v. County of San Bernardino* (2016) 247 Cal.App.4th 326, 344 fn.4 [county did not have authority to apply building and zoning regulations to water project proposed by local water agency pursuant to Sections 53091 and 53096].) Because a wind turbine facility is an electrical generation facility, the project qualifies for the exemptions under subdivisions (d) and (e) of Section 53091.

2. The only element of the LUCP that could apply to the Solano 4 Wind Project is preempted by federal law.

   The ALUC in its LUCP has imposed broad land use controls based on general safety and noise concerns, but in limiting the height of wind turbines specifically, it has relied solely on the narrow and technical issue of alleged radar interference. As to this narrow issue regarding radar system interference that are related to air safety and aviation navigation, the FAA regulations occupy the field and preempt the ALUC's land use regulations. Even California courts have also concluded that the FAA has authority over navigation aids such as air control towers, radio navigation systems, runway markers, and directional beams. (*Bethman v. City of Ukiah* (1989) 216 Cal.App.3d 1395, 1403, 1408; *City of Burbank v. Burbank-Glendale-Pasadena Airport Authority* (1999) 72 Cal.App.4th 366, 379.) For example, in *Big Stone Broadcasting, Inc. v. Lindbloom* (D.S.D. 2001) 161 F. Supp. 2d 1009, the court found that the local regulations cannot veto a radio tower where FAA has already issued a finding of significant hazards, including existing and planned visual flight rules (VFR) operations and procedures. (Id. at 1011-12, 1019.)

   In this case, the FAA has already evaluated the project's "impact on existing and proposed arrival, departure, and en route procedures for aircraft operating under both visual flight rules and instrument flight rules; the impact on all existing and planned public-use airports, military airports and aeronautical facilities; and the cumulative impact resulting from the studied structure when

combined with the impact of other existing or proposed structures." (FAA Determination of No Hazard to Air Navigation, dated February 1, 2019, and extensions dated January 28, 2021 (Appendix G FAA Determination). The FAA Determination states that the project's "aeronautical study revealed that the structure 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's analyses of the project's impacts included exceedances of various obstructions standards and concluded that just because a wind turbine is within the line of sight of a radar sensor does not imply that the turbine will result in unacceptable adverse impacts on Air Traffic Control (ATC) operations. While the project turbines would be within the line of sight of the Travis AFB radar facilities, "[s]tudy for possible Visual Flight Rules (VFR) effect disclosed that the proposals would have no effect on existing or proposed VFR arrival or departure operations." The FAA thus concluded that while the project turbines "would extend upwards into altitudes commonly used for en route VFR flight," there is no information that the turbines would be "located along a regularly used VFR route or that they would pose a problem for pilots operating en route" or otherwise result in unacceptable adverse impact on ATC operations. The FAA's determination is conclusive. This is consistent with the empirical evidence: SMUD is not aware of any airplane accidents, incidents, or safety issues within the Solano Wind Resource Area throughout the more than 20 years SMUD has been operating wind turbines in Solano County.

Further, the ALUC neglected to file a petition for review of the FAA Determination by the review deadline, and the FAA Determination became final on March 13, 2019. The ALUC has thus waived any challenge to the FAA's Determination of No Hazard (DNH), and the LUCP provisions that rely on unsupported and inaccurate radar interference issues are preempted under the federal law. Therefore, there is no basis for the ALUC review of the project for radar interference or under the visual flight rules.

3. The ALUC does not have authority to review individual projects, such as SMUD's Generation Project, under the SAA.

   ALUC review of local actions is greatly limited where local plans are consistent with an LUCP. An ALUC can only review individual projects (1) when there is no LUCP or, (2) when an ALUC has found a local agency's general plan or

specific plan inconsistent with the LUCP, the local agency has neither revised its general plan or specific plan to be consistent with the LUCP nor overruled this determination of inconsistency. (California Airport Land Use Planning Handbook (2002), p. 4-8, citing Pub. Utilities Code, §§ 21675.1(b), 21676.5(a); see also California Airport Land Use Planning Handbook (2011), p. 6-4 for a more recent version of Handbook.) Here, (1) the ALUC has an adopted LUCP, and (2) the ALUC found the Solano County's General Plan consistent with the LUCP and SMUD, as a local agency, does not have a planning document that would be equivalent to a General Plan). As such, the statutory triggers allowing the ALUC to review an individual project, such as the Solano 4 Wind Project, are not met in this case. Further, while an agency can agree to have an ALUC review individual projects, such review is advisory only. (Pub. Resources Code § 21676.5(b); California Airport Land Use Planning Handbook (2002), p. 4-9.) As such, the Solano 4 Wind Project is not subject to ALUC consistency determination under the SAA provisions. Further, even where an ALUC's review capacity is more than advisory, a local agency can overrule the ALUC's consistency determination. (See Pub. Resources Code § 21675.1(d).)

4. Even if the LUCP applied to the project, which it does not, SMUD can overrule the ALUC's determination.

   Assuming for the sake of argument that the State Aeronautics Act's requirement for obtaining a consistency determination encompasses SMUD's Solano 4 Wind Project, SMUD can overrule the ALUC by holding a hearing, making findings that the action is consistent with the purposes of the SAA, and obtaining a two-thirds vote of its governing body. (See Pub. Util. Code, § 21674.7(b) ["This subdivision does not limit the authority of local agencies to overrule [the ALUC] actions or recommendations pursuant to Sections 21676, 21676.5, or 21677."].)

   Broadly stated, the intent of the SAA is to minimize the risk to public health, safety, and welfare from exposure to excessive noise and safety hazards (i.e., aircraft accidents) and to ensure the orderly development and expansion of airports and surrounding areas. (Pub. Util. Code, § 21670(a); see also *Suisun Alliance*, 2010 WL 3280273 at 4-5.) Therefore, even if the ALUC provisions were to apply to the project, SMUD has the authority under Sections 21676 and 21676.5 to overrule the ALUC's consistency determination upon making the requisite findings, similar to any other local agency such as a city or county.

As stated above, and without expressly limiting the provisions to cities or counties, the SAA does not limit "the authority of local agencies" to overrule an ALUC's actions or recommendations, and certainly does not limit that discretion to only local agencies with land use authority. (See Pub. Util. Code, § 21674.7(b).) Further, by using the term "local agency" in Sections 21676 and 21676.5 of the Public Utilities Code, and conversely and expressly using the term "city or county" in Section 21675.1(d) with respect to parallel provisions regarding overruling an ALUC's determination, the legislature clearly intended that "local agencies" such as SMUD similarly have discretion to overrule the ALUC under Sections 21676 and 21676.5. (See Pub. Utilities Code, §§ 21674.7(b), 216751(d), 21676, 21676.5, and 21677 [allowing local agencies in Marin County to overrule an ALUC determination by a simple majority].) In fact, Solano County staff already conceded that "SMUD is a regulated entity by the ALUC and is similarly situated as any city or the County." (Solano County ALUC Agenda Submittal for ALUC-17-10: SMUD Plan Amendment Request [File No. AC 17-035], October 12, 2017; see also *Suisun Alliance v. Suisun City* (2010) Solano Co. Sup. Ct. Case No. A125042, 2010 WL 3280273, at 4-5).) The Legislature clarified its intent that a local agency such as a special district has the ability to overrule the ALUC determination, as long as the local agency follows the proper procedure set forth in the SAA. (See Assembly Bill Analysis for AB 332 [May 2003], at p. 3.)

As discussed above, prior to the preparation of the DEIR, SMUD commissioned a supplemental individual obstruction evaluation and airspace analysis (Capitol Airspace Group 2018a) to identify obstacle clearance surfaces established by the Federal Aviation Administration (FAA), and a supplemental radar cumulative impact study with design elements to avoid or minimize potential safety impacts (Westslope 2018a). The Capitol Airspace Group supplemental study performed a series of analyses that are similar to the FAA aeronautical analysis and process. The supplemental study was commissioned to provide SMUD with a reasonable expectation of the likely outcome of the FAA review process. The supplemental radar cumulative impact modeling study determined there would be a negligible impact over baseline to the associated Travis AFB radar systems resulting from installation of twenty-two (22) 136M turbines following removal of the existing 23 WTGs, and a net zero impact for installation of nineteen (19) 150M turbines following removal of the existing 23 WTGs compared to the existing baseline conditions, and therefore the Solano 4 Wind Project would not contribute to a cumulative impact (Westslope 2018a).

Both supplemental studies are included in Appendix A of this FEIR. Pursuant to applications filed by SMUD, the FAA issued DNHs for each of the proposed turbines for the project; the FAA also confirmed that the DNHs encompass not only the Visual Flight Rules (VFR) routes but also potential impacts on radar. As stated above, the ALUC did not file a petition challenging the Determinations. Thus, were SMUD to apply for a consistency determination by the ALUC and receive a determination of inconsistency, SMUD's decision on whether to overrule the ALUC could be based on its own commissioned findings as well as the bases identified by the FAA. (*California Aviation Council v. City of Ceres* (1992) 9 Ca1.App.4th 1384, 1393 [a court's review of a local agency's findings in support of its decision to overrule the ALUC is for substantial evidence].)

Additionally, even if SMUD were required to follow certain procedures in the State Aeronautics Act (SAA) or the Solano County Airport Land Use Commission's Travis Air Force Base Land Use Compatibility Plan (LUCP), a possible inconsistency with those procedures or standards does not automatically equate to a significant adverse change in the physical environment under CEQA. Courts have emphasized that "an inconsistency between a project and other land use controls *does not in itself* mandate a finding of significance. It is merely a factor to be considered in determining whether" a project may cause a significant impact. (*Lighthouse Field Beach Rescue v. City of Santa Cruz* (2005) 131 Cal.App.4th 1170, 1207 [emphasis added]; *California Building Industry Assn. v. Bay Area Air Quality Management Dist.* (2016) 2 Cal.App.5th 1067, 1087 [a project's inconsistency with a general plan does not mandate finding of significant effect on the environment]; *Saltonstall v. City of Sacramento* (2015) 234 Cal.App.4th 549, 585 [potential impacts to public safety by event crowds not itself a significant environmental impact under CEQA].) Here, the project is inconsistent with the LUCP's blanket provision limiting to 100 feet the height of any wind turbine within a line-of-sight of the Travis Air Force Base (AFB) Digital Airport Surveillance Radar (DASR) Radar Installation. According to the LUCP itself, the height limit for wind turbines is designed to address radar interference, as well as vertical obstruction hazards. Whatever the purpose, the EIR evaluated possible radar interference and obstruction hazard concerns with regards to local airport uses and found that this project would not result in any significant interference or other safety hazard. Further, the FAA—the Federal agency entrusted with air traffic-related safety concerns—confirmed that this project would result in no

hazard to regional air traffic. Thus, again, despite any procedural inconsistencies or disagreements among agencies, the physical impact of this project has been addressed.

Please also refer to Response to Comment Letters 4-1 and 5-1a, which addresses specific comments related to these issues. Please also see the April 2019 NOP response letter from Downey Brand (Appendix C).

PROJECT BACKGROUND AND HISTORY

Many options were available to SMUD with regards to how the Solano 4 Wind Project could be developed. SMUD contracted with Geoff Blackman of Westslope Consulting, a radar system specialist, to model the expected impact on the radar systems associated with the project area. The first configuration evaluated adding turbines in 2016 to the undeveloped property to the west of the SMUD project area. This would have resulted in the addition of approximately 16 turbines and an impact on the associated radar systems. To mitigate for a potential increase over baseline radar interference by local wind turbines, an option was developed that included the removal of the existing Solano Phase 1 project (23 Vestas 47m rotor diameter turbines on 50m and 65m towers).

SMUD conducted a survey of commercially available turbines. Using these turbines, preliminary site plans were developed including turbine counts that ranged from 19 to 25 turbines (Black and Veatch 2018; see Appendix A of this FEIR). SMUD staff then researched the turbines expected to be commercially available at the expected date of the proposed project's construction and attended the American Wind Energy Association Siting and Environmental Compliance conference to understand what was currently being permitted. From these efforts, SMUD discovered that the majority of turbine manufactures were developing larger, taller turbines. SMUD then updated the conceptual project layout configuration using revised turbine data. The final configuration considered reduced the project turbine count to a preferred 19, per the project CAISO Large Generator Interconnection Application (LGIA), with a maximum of 22 turbines. It also includes the removal of the existing 23 Solano Phase 1 turbines. The supplemental radar cumulative impact modeling study determined there would be a negligible impact over baseline to the associated Travis AFB radar systems resulting from installation of twenty-two (22) 136M turbines following removal of the existing 23 WTGs, and a net zero impact for installation of nineteen (19) 150M turbines following removal of the existing 23 WTGs compared to the existing baseline conditions, and therefore the Solano 4 Wind Project would not contribute to a cumulative impact (Westslope 2018a).

The United States Congress charged the Federal Aviation Administration (FAA) with the responsibility to encourage air commerce in the United States. As part of this responsibility, the FAA is tasked with ensuring air safety and preserving the National Airspace System (NAS). It is through these mandates that the FAA draws its authority to conduct aeronautical studies of tall structures, including wind turbines (Aeronautical Study Process, Capitol Airspace Group 2018b).

There are eight offices internal to the FAA. In addition, the Department of Defense (DOD), Army, Navy, Air Force and the Department of Homeland Security (DHS) take part in the aeronautical study process. The DOD formal review process occurs concurrently with FAA's aeronautical study. Technicians in each office review each proposed tall structure location to ensure that the structure does not interfere with their areas of responsibility. Once all offices have responded, the airspace specialist, typically a former air traffic controller, assesses all of the responses and subsequently determines whether the planned structure exceeds the imaginary surfaces established under 14 CFR Part 77, Sections 77.17, 77.19 and 77.21. Structures that do not exceed these surfaces are, in most cases, issued favorable Determinations of No Hazard (DNH). Structures that exceed these surfaces are generally issued a Notice of Presumed Hazard (NPH). An NPH letter is meant to be a means for the FAA to notify the developer that the FAA has identified an issue that will require further study to determine whether or not the structure will pose a hazard to air navigation. Typically, the FAA also includes in the letter any objections received by the various responding offices in the FAA, DOD and DHS. If a military objection is raised, due to potential for impact on radar surveillance systems for example, a Mitigation Response Team (MRT) may be formed. This team would include representatives from the potentially affected air force base. The MRT conducts detailed analyses and negotiates mitigation options with the structure developer. If mitigation options are identified and agreed upon, the Mitigation Oversight Committee will review the solutions (Aeronautical Study Process, Capitol Airspace Group 2018b).

It is through the public comment period that the FAA collects information regarding the actual impact of the structure on local flights. Once the comment period closes, the FAA will collect all comments, discard those that are not of valid aeronautical nature, and proceed to make a final decision. The FAA then issues a Determination of Hazard to Air Navigation when the aeronautical study concludes that the proposed construction or alteration will exceed an obstruction standard and would have a substantial aeronautical impact. The FAA also issues a DNH when a proposed structure does not exceed any of the obstruction standards and would not be a hazard to air navigation. A DNH will also be issued when the aeronautical study concludes that the proposed construction or alteration

will exceed an obstruction standard but would not have a substantial aeronautical impact to air navigation, and it may include the following: conditional provisions of a determination, limitations necessary to minimize potential problems, such as the use of temporary construction equipment, supplemental notice requirements, when required, and marking and lighting recommendations, as appropriate (Aeronautical Study Process, Capitol Airspace Group 2018b).

On February 8, 2018, SMUD started meeting with Travis Air Force Base (AFB) to discuss the Solano 4 Wind Project and associated environmental review and project planning processes, project schedule, and studies to be prepared (radar impact study and an obstruction evaluation and airspace analysis). SMUD also met with Solano County on February 28th, 2018 to share the same information. Since the February 8, 2018 meeting with Travis AFB, SMUD met with Travis AFB on five separate occasions to discuss the project, including the radar impact study and obstruction evaluation and airspace analysis. SMUD filed applications with the FAA on October 10, 2018 and on February 2, 2019 received DNHs for nineteen (19) Solano 4 turbines with conditions related to marking and lighting. The determinations were subject to third party petitions received by March 3, 2019. While an attorney filed a letter on behalf of the County/ALUC, the FAA determined that the letter was not an objection, but constituted a series of statements. The third-party submittal period ended, and the determinations became final on March 13, 2019. SMUD notified Travis AFB on April 14, 2020 that SMUD had started the process with the FAA to request extensions for the nineteen (19) DNHs received for the Solano 4 Wind Project. On September 28, 2020 SMUD met with Colonel Simmons of Travis AFP to discuss the project. Key take-away messages from this meeting included Colonel Simmons' request that SMUD continue working with the County as part of the FAA DNH extension process. It was also stated that Travis AFB would participate in the FAA process, would conduct independent studies, and that Travis AFB would like to understand the cumulative effect of future repowering/development at the Solano Wind project site. As Travis AFB worked through its own technical evaluation, SMUD scheduled bi-weekly meetings with Travis AFB to provide support and receive updates. These meetings continued until Travis AFB concluded its study. The DNH extension process resulted in the formation of a Mitigation Response Team (MRT) with Travis AFB as required by the DOD Military Aviation and Installation Assurance Siting Clearinghouse (the "DOD Siting Clearinghouse") mission compatibility evaluation process as documented in Part 211 of Title 32 of the Code of Federal Regulations (Military Aviation and Installation Assurance Siting Clearinghouse, accessed 2021). The result of the MRT review was a conclusion by the 60th Air Mobility Wing of "[a]s proposed, Solano 4 should have minimal negative impact on Travis Operations" and a conclusion by the DOD Siting

Clearinghouse that Solano 4 "will not present an adverse impact to military operations." (Simmons, 2021; Sample, 2021). SMUD received extensions for the 19 DNHs for Solano 4 Wind Project on January 28, 2021, as requested. (See FAA Determinations and letter from Steven J. Sample in Appendix B of the FEIR.)

With the FAA's confirmation of a safe project configuration, SMUD is now moving forward in its efforts to develop the project using this proposed configuration.

Please also see the results of the supplemental cumulative impact studies conducted by Westslope Consulting (2018a) and Capitol Airspace (2018a). As discussed above, prior to the preparation of the DEIR, these supplemental studies were prepared to assist with planning efforts and facilitate coordination with Travis AFB and inform SMUD of the FAA process. These supplemental studies are discussed in the Letter L5a-1 Response to the Shute, Mihaly, & Weinberger LLP Exhibit 1, memorandum from Dr. Jerry Johnson included in the FEIR. SMUD believes that the analysis conducted to date and provided in this FEIR is thorough and adequate.

While additional information has been provided in this FEIR and its appendices, that information merely amplifies and clarifies the evidence and findings in the DEIR. Therefore, no recirculation would be required under Public Resources Code Section 21092.1 and CEQA Guidelines Section 15088.5(a). (CEQA Guidelines, § 15088.5(a)-(b); *San Francisco Baykeeper, Inc. v. Cal. State Lands Com.* (2015) 242 Cal.App.4th 202, 224–225.)

SAFETY CONCERNS RELATED TO PROJECT SITING

Safety is a core value at SMUD, and staff developed the Solano 4 Wind Project by following the SMUD North Star priority area for safety: "Be safe. Always."

Chapter 3.7 'Hazards and Hazardous Materials' of the DEIR, Impact 3.7-3 analyzes the safety hazard to air traffic and notes that the FAA and its regulations concerning air safety and aviation navigation preempt the ALUC's land use regulations regarding radar system interference. The FAA conducted an independent evaluation of the Solano 4 Wind Project and determined there would be no significant hazard to air traffic control operations. As discussed in detail above under "Land Use," Determinations of No Hazard were issued for the 19 Solano 4 Wind turbines on February 1, 2019, and extensions were issued on January 28, 2021 (see Appendix B FAA Determinations of FEIR). The DEIR also includes Mitigation Measure 3.7-3 that requires all wind turbine generators (WTGs) be lit with temporary lighting once they reach a height of 200 feet or greater until the permanent lighting configuration is turned on.

Although SMUD, as a local agency, is not required to obtain ALUC approval for the development of its electrical generation facilities such as the project, SMUD chose to participate in County and ALUC efforts to develop criteria for the 2015 LUCP update. SMUD met repeatedly with the County, the ALUC and Travis AFB to support development of a policy that would allow for wind development while incorporating appropriate measures or design elements to avoid or minimize potential impacts to radar and aerial navigation. In addition to presenting findings on radar modeling and turbines, SMUD submitted a comment letter to the ALUC urging any plan to allow for discretionary approval of turbines (of heights above 200') upon a demonstration that the project would not interfere with radar or base operations and allow for repowering of existing wind turbine sites, rather than using an inflexible line-of-sight standard in place of actual analysis. In 2015, the ALUC ultimately adopted a LUCP relying exclusively on line-of-sight for turbines without technical evidence to justify the expansion of land use compatibility zones; but the staff report indicates the line-of-site criteria was intended to eliminate inconsistencies with the Travis AFB LUCP and other policy documents, to eliminate ambiguity and uncertainty on how the LUCP should apply to various properties, and to clarify the extent of the ALUC's jurisdiction. Later, SMUD participated in a working group to explore alternatives to the line-of-sight analysis for replacement of existing facilities or repowering of existing wind farms within the Solano Wind Resource Area. In March 2016, a group was established to address these items, which included SMUD, but the ALUC dissolved the group unceremoniously.

Nonetheless, SMUD hired Westslope Consulting, LLS to conduct a supplemental cumulative study for the Solano 4 Wind Project (Westslope 2018a) and to provide a technical analysis of the project's potential impacts on radar and aeronautical navigation. This supplemental study, the SMUD Solano 4 Cumulative Impact Study and Mitigation Solution Results for 2018 Vestas V136 and V150 Wind Turbine Layouts dated September 6, 2018, is included in Appendix A of this FEIR. This supplemental radar cumulative impact modeling study determined there would be a negligible impact over baseline to the associated Travis AFB radar systems resulting from installation of twenty-two (22) 136M turbines following removal of the existing 23 WTGs, and a net zero impact for installation of nineteen (19) 150M turbines following removal of the existing 23 WTGs compared to the existing baseline conditions, and therefore the Solano 4 Wind Project would not contribute to a cumulative impact (Westslope 2018a).

SOLANO WIND RESOURCE AREA (FORMERLY MHWRA)

The *Solano County Wind Turbine Siting Plan and Environmental Impact Report* (Siting Plan) (Solano County 1987) designated the MHWRA as suitable for wind energy

development, based on wind monitoring and assessment studies prepared in the late 1970s and 1980s by the California Energy Commission, Pacific Gas and Electric Company (PG&E), and the U.S. Bureau of Reclamation. With adoption of the *Solano County General Plan* in 2008, the Siting Plan is no longer in effect and the 2008 *Solano County General Plan* describes wind resources areas of the County as located in the Collinsville–Montezuma Hills south of SR 12. The County defers to the California Energy Commission (CEC) to define areas suitable for commercial wind energy. The CEC's map of operational wind projects in the Solano Wind Resource Area (CEC 2018) describes the project site and surrounding area as having high sustainable winds suitable for wind energy. For this reason, and the site-specific information noted above, SMUD chose the proposed project site. SMUD has ascertained that the DEIR has been sufficiently detailed so that the public and decisionmakers are properly informed and can conduct meaningful evaluation of the way project impacts were avoided, minimized, or mitigated.

State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Bay Delta Region
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GAVIN NEWSOM, Governor
CHARLTON H. BONHAM, Director

Letter 1

August 30, 2019

Mr. Ammon Rice
Sacramento Municipal Utility District
6201 S Street, MS H201
Sacramento, CA 95817

Subject: Solano 4 Wind Project, Draft Environmental Impact Report, SCH #2019012016, Solano County

Dear Mr. Rice:

The California Department of Fish and Wildlife (CDFW) received a draft Environmental Impact Report (EIR) from Sacramento Municipal Utility District (SMUD) for the Solano 4 Wind Project (Project) pursuant the California Environmental Quality Act (CEQA).

CDFW is submitting comments on the draft EIR to inform SMUD, as the Lead Agency, of our concerns regarding potentially significant impacts to sensitive resources associated with the proposed Project. CDFW is providing these comments and recommendations regarding those activities involved in the Project that are within CDFW's area of expertise and relevant to its statutory responsibilities (Fish and Game Code, § 1802), and/or which are required to be approved by CDFW (CEQA Guidelines, §§ 15086, 15096 and 15204).

CDFW ROLE

CDFW is a Trustee Agency with responsibility under CEQA (Pub. Resources Code, § 21000 et seq.) pursuant to CEQA Guidelines section 15386 for commenting on projects that could impact fish, plant, and wildlife resources. CDFW is also considered a Responsible Agency if a project would require discretionary approval, such as a California Endangered Species Act (CESA) permit, a Lake and Streambed Alteration (LSA) Agreement, or other provisions of the Fish and Game Code that afford protection to the state's fish and wildlife trust resources.

1-1

REGULATORY REQUIREMENTS

California Endangered Species Act

Please be advised that a CESA Incidental Take Permit (ITP) must be obtained if the Project has the potential to result in "take" of plants or animals listed under CESA, either during construction or over the life of the Project. Issuance of a CESA Permit is subject to CEQA documentation; the CEQA document must specify impacts, mitigation measures, and a mitigation monitoring and reporting program. If the Project will impact CESA listed species, early consultation is encouraged, as significant modification to the Project and mitigation measures may be required in order to obtain a CESA Permit.

CEQA requires a Mandatory Finding of Significance if a project is likely to substantially restrict the range or reduce the population of a threatened or endangered species. (Pub. Resources Code,

§§ 21001, subd. (c), 21083; CEQA Guidelines, §§ 15380, 15064, and 15065). Impacts must be avoided or mitigated to less-than-significant levels unless the CEQA Lead Agency makes and supports Findings of Overriding Consideration (FOC). The CEQA Lead Agency's FOC does not eliminate the Project proponent's obligation to comply with Fish and Game Code section 2080.

Lake and Streambed Alteration

CDFW requires an LSA Notification, pursuant to Fish and Game Code section 1600 et. seq., for Project activities affecting lakes or streams and associated riparian habitat. Notification is required for any activity that may substantially divert or obstruct the natural flow; change or use material from the bed, channel, or bank including associated riparian or wetland resources; or deposit or dispose of material where it may pass into a river, lake or stream. Work within ephemeral streams, washes, watercourses with a subsurface flow, and floodplains are subject to notification requirements. CDFW will consider the CEQA document for the Project and may issue an LSA Agreement. CDFW may not execute the final LSA Agreement (or ITP) until it has complied with CEQA as a Responsible Agency.

1-1 Cont'd

PROJECT DESCRIPTION SUMMARY

Proponent: Sacramento Municipal Utility District

Description and Location: The Project site is located within the Solano County Wind Resource Area (WRA) in southern Solano County. The WRA lies north of the confluence of the Sacramento and San Joaquin rivers and southwest of the City of Rio Vista. The Project would involve the decommissioning of 59 existing wind turbine generators (WTGs) and the construction and operation of up to 22 new WTGs. Associated access roads and collection lines would be installed to support the new WTGs.

COMMENTS AND RECOMMENDATIONS

CDFW offers the below comments and recommendations to assist SMUD in adequately identifying and/or mitigating the Project's significant, or potentially significant, direct and indirect impacts on fish and wildlife (biological) resources.

California Tiger Salamander (*Ambystoma californiense*)

The Project site is located within the range of California tiger salamander (CTS; *Ambystoma californiense*) and is located near known and potential breeding habitat for CTS. CTS is both federally listed and state listed as threatened. The draft EIR acknowledges potential for take of CTS, and identifies impacts to the species as potentially significant; however, Mitigation Measure 3.3-1a fails to reduce impacts to less-than-significant. Any action that could cause take of CTS, such as ground disturbance during construction or land management activities (e.g. disking), must be authorized under appropriate federal and state permits.

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Due to the potential presence of this listed species and the potential for Project-related take, including relocation out of harm's way, CDFW advises that the Project proponent obtain a CESA Permit (pursuant to Fish and Game Code Section 2080 et seq.) in advance of Project

implementation. Issuance of a CESA Permit is subject to CEQA documentation; therefore, the CEQA document should specify impacts, mitigation measures, and fully describe a mitigation, monitoring and reporting program. If the proposed Project will impact any CESA-listed species, early consultation is encouraged, as significant modification to the Project and mitigation measures may be required in order to obtain a CESA Permit. More information on the CESA permitting process can be found on the CDFW website at https://www.wildlife.ca.gov/Conservation/CESA.

CDFW recommends that SMUD, as the Lead Agency, require the Project proponent to apply for an ITP for CTS as a condition of Project approval.

1-2 Cont'd

Tricolored Blackbird (*Agelaius tricolor*)

The tricolored blackbird is state listed as threatened. Impact 3.3-3 indicates permanent impacts to foraging habitat for numerous non-raptor avian species, including tricolored blackbird; however, no mitigation measures are proposed to offset these impacts. Please note that the permanent loss of habitat is considered significant in and of itself, and should be mitigated regardless of current level of disturbance or reconnaissance survey results. Additionally, the EIR acknowledges that operation of WTGs could result in take of special-status birds and identifies impacts to special-status birds (including tricolored blackbird) as potentially significant, but fails to reduce impacts to less-than-significant. Any action that could cause take of tricolored blackbird, including ongoing operation of WTGs, must be authorized under appropriate federal and state permits.

Due to the known presence of this listed species and the potential for Project-related take, CDFW advises that the Project proponent obtain a CESA Permit (pursuant to Fish and Game Code Section 2080 et seq.) in advance of Project implementation. Issuance of a CESA permit is subject to CEQA documentation; therefore, the CEQA document should specify impacts, mitigation measures, and fully describe a mitigation, monitoring and reporting program. If the proposed Project will impact any CESA-listed species, early consultation is encouraged, as significant modification to the Project and mitigation measures may be required in order to obtain a CESA permit. More information on the CESA permitting process can be found on the CDFW website at https://www.wildlife.ca.gov/Conservation/CESA.

CDFW recommends that SMUD, as the Lead Agency, require the Project proponent to apply for an ITP for tricolored blackbird as a condition of Project approval.

1-3

Swainson's Hawk (*Buteo swainsoni*)

Swainson's hawk is state listed as threatened and known to nest near and forage on the Project site. The draft EIR identifies potentially significant impacts to Swainson's hawk during Project construction and operation, including anticipated take during WTG operation. Due to the known presence of this listed species and the anticipated take, CDFW advises that the Project proponent obtain a CESA Permit (pursuant to Fish and Game Code Section 2080 et seq.) in advance of Project implementation. Issuance of a CESA Permit is subject to CEQA documentation; therefore, the CEQA document should specify impacts, mitigation measures, and fully describe a mitigation, monitoring and reporting program. If the proposed Project will

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impact any CESA-listed species, early consultation is encouraged, as significant modification to the Project and mitigation measures may be required in order to obtain a CESA Permit. More information on the CESA permitting process can be found on the CDFW website at https://www.wildlife.ca.gov/Conservation/CESA. CDFW recommends that the District, as the Lead Agency, require the Project proponent to apply for an ITP for Swainson's hawk as a condition of Project approval.

To further reduce Project impacts, CDFW provides the following recommendations:

1) Revise Mitigation Measure 3.3-4a to require a qualified biologist to conduct pre-construction surveys prior to any construction activities that may impact Swainson's hawk in accordance with the Swainson's Hawk Technical Advisory Committee's (TAC) *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley* (2000), available on CDFW's webpage at https://www.wildlife.ca.gov/Conservation/Survey-Protocols#377281284-birds. Survey methods should be closely followed by starting early in the nesting season (late March to early April) to maximize the likelihood of detecting an active nest (nests, adults, and chicks are more difficult to detect later in the growing season because trees become less transparent as vegetation increases). Surveys should be conducted: (1) within a minimum 0.25-mile radius of the Project area or a larger area if necessary to identify potentially impacted active nests, and (2) for at least the two survey periods immediately prior to initiating Project-related construction activities. Surveys should occur annually for the duration of the Project. The qualified biologist should have a minimum of two years of experience implementing the TAC survey methodology. If an active nest is identified, a 0.25-mile buffer shall be maintained around the nest until the young fledge. If Swainson's hawk activity (foraging or courtship, not just nests) is noted within 0.25 miles of the Project site and a non-disturbance buffer of 0.25 miles cannot be implemented, the Project proponent should be required to obtain a CESA ITP and pursue further compensatory mitigation as a condition of Project approval.

2) Revise Mitigation Measure 3.3-5 to require consultation with CDFW to determine ratios for off-site compensatory mitigation. The off-site mitigation ratio of 0.75:1 (mitigation: loss) currently proposed in Mitigation Measure 3.3-5 results in a net loss of foraging habitat and may be insufficient to mitigate impacts to less-than-significant. Mitigation lands should be protected in perpetuity under a conservation easement and be managed in perpetuity through an endowment with an appointed land manager. The easement should be held by a governmental entity, special district, non-profit organization, for-profit entity, person, or another entity to hold title to and manage the property provided that the district, organization, entity, or person meets the requirements of Government Code sections 65965-65968, as amended. As the state's trustee for fish and wildlife resources, CDFW should be named as a third-party beneficiary under the conservation easement.

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Western Burrowing Owl (*Athene cunicularia*)

Western burrowing owl is designated as a California Bird Species of Special Concern. The draft EIR states that burrowing owls are known to be present within and adjacent to the Project area.

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Mitigation Measure 3.3-4b proposes passive relocation to mitigate impacts to occupied burrows within the Project site during the non-breeding season. Please be advised that CDFW does not consider exclusion of burrowing owls or "passive relocation" in and of itself sufficient to reduce the permanent loss of habitat to a level of less-than-significant. The long-term demographic consequences of exclusion techniques have not been thoroughly evaluated, and the survival rate of evicted or excluded owls is unknown. All possible avoidance and minimization measures should be considered before temporary or permanent exclusion and closure of burrows is implemented in order to avoid "take".

The CEQA document for the Project should also include measures to avoid or minimize loss of burrowing owl foraging habitat, and mitigation for loss of habitat that cannot be fully avoided. Please note that the permanent loss of habitat is considered significant in and of itself, and should be mitigated regardless of current level of disturbance or reconnaissance survey results. To offset this significant permanent impact, the Project proponent should be required to purchase and protect in perpetuity compensatory mitigation lands at a minimum of a 1:1 mitigation ratio (or a minimum mitigation ratio of 3:1 if active burrows or winter roosts are identified on site and take cannot be avoided) as a condition of Project approval. If active burrows or winter roosts are found onsite and take cannot be avoided, the mitigation ratio should be increased to a minimum of 3:1 (mitigation: loss).

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Raptor Foraging Habitat

Reclamation of roads is briefly discussed in association with Impact 3.3-5: Removal and modification of raptor nesting, foraging, and roosting habitat during construction. The acreage of reclaimed roads is subsequently deducted from the total acreage of permanent impacts to foraging habitat. The habitat structure and value of the reclaimed acreage is not described nor mapped within the draft EIR and may not be suitable for mitigation land. Furthermore, counting reclaimed land as foraging land conflicts with Mitigation Measure 3.3-9a: Avoid and minimize operational impacts on birds and bats, which calls for maintaining a landscape within the Project area that "does not encourage bird or bat occurrence" and implementing a prey management program to reduce prey that could attract eagles and other raptors. As such, the reclaimed acreage should not be considered as mitigation habitat nor should it be deducted from cumulative Project impacts, without consultation with and concurrence of CDFW and U.S. Fish and Wildlife Service (USFWS).

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Injury to and Mortality of Raptors, Other Birds, and Bats from Project Operation

Impact 3.3-9 estimates the mortality of 312 to 641 individual birds and 169 to 356 bats per year of operation as potentially significant; however, it is unclear if or how mitigation measures proposed will sufficiently reduce these impacts. Please expand the proposed mitigation measures to include quantifiable and enforceable success criteria.

Mitigation Measure 3.3-9b prescribes one year of post-construction mortality monitoring consisting of a single survey at all turbines. A single survey is insufficient to determine mortality trends and to validate pre-construction mortality estimates. CDFW recommends conducting annual mortality monitoring for a minimum of five years post-construction, followed by periodic monitoring every three years for the life WTG operation, as biological and operational conditions

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may change. Survey methodology should be developed in consultation with CDFW and USFWS, and should be incorporated into the EIR in detail, including specific, quantifiable triggers for initiating implementation of Mitigation Measure 3.3-9h. All mortalities within the Project site should be reported to CDFW and USFWS immediately upon discovery.

1-7 Cont'd

FILING FEES

The Project, as proposed, would have an impact on fish and/or wildlife, and assessment of filing fees is necessary. Fees are payable upon filing of the Notice of Determination by the Lead Agency and serve to help defray the cost of environmental review by CDFW. Payment of the fee is required in order for the underlying Project approval to be operative, vested, and final. (Cal. Code Regs., tit. 14, § 753.5; Fish and Game Code, § 711.4; Pub. Resources Code, § 21089).

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CONCLUSION

To ensure significant impacts are adequately mitigated to a level less-than-significant, the feasible mitigation measures described above should be incorporated as enforceable conditions into the final CEQA document for the Project. CDFW appreciates the opportunity to comment on the draft EIR to assist SMUD in identifying and mitigating Project impacts on biological resources.

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Questions regarding this letter or further coordination should be directed to Ms. Jennifer Rippert, Environmental Scientist, at (707) 428-2069 or Jennifer.Rippert@wildlife.ca.gov; or Ms. Melissa Farinha, Senior Environmental Scientist (Supervisory), at (707) 944-5579.

Sincerely,

Gregg Erickson
Regional Manager
Bay Delta Region

cc: State Clearinghouse

Letter 1-1 Response

Gregg Erickson, Regional Manager, Bay Delta Region
California Department of Fish and Wildlife
August 30, 2019

L1-1 *CDFW Role and Project Description. The commenter describes the responsibilities of the California Department of Fish and Wildlife (CDFW) as a Trustee Agency, discusses CDFW's relevant regulatory requirements, and provides a description of the Solano 4 Wind Project.*

The commenter has provided introductory information describing the role of CDFW and its statutory requirements. These comments are not directed at the adequacy of the DEIR, nor do they contain an argument raising significant environmental issues. The comments are noted and no further response is required.

L1-2 *California Tiger Salamander. The commenter notes that the project site is within the range of the State and federally listed California tiger salamander (CTS) and states that the project could result in take of CTS. The commenter expresses the opinion that Mitigation Measure 3.3-1a would fail to reduce the impact of the project on CTS to less than significant and recommends that SMUD obtain an Incidental Take Permit for CTS, pursuant to the California Endangered Species Act.*

As described on pages 3.3-89 through 3.3-90 of the DEIR and in CTS habitat assessments and surveys conducted in and near the project site (AECOM 2018b; Rana Resources 2010; AWE 2017d), CTS are considered highly unlikely to occur on the project site. This conclusion is based on the results of surveys and the disturbed nature of the uplands throughout the project site, which have been subject to land use practices involving ground disturbance for many decades. These uplands feature limited upland refugia, regular disruptions and barriers to dispersal, and habitat fragmentation. Furthermore, all aquatic features in or near the project site are 2.27 miles or more from the nearest known CTS occurrence and are 3.57 miles or more from the nearest known breeding occurrence of this species. And, as mentioned in the DEIR, 1.24 miles is the observed mobility of CTS.

These CTS survey results were provided to CDFW and the U.S. Fish and Wildlife Service (USFWS) before release of the DEIR. In addition, SMUD hosted a tour of the project site so that resource USFWS and CDFW staff could make their own assessments of CTS habitat conditions. SMUD also met with USFWS staff to discuss the results of the CTS surveys. At that meeting, the USFWS staff concurred with the conclusion of the survey reports that CTS were highly unlikely to be present at the site, but they nevertheless requested that a monitor be present during project activities that may affect a wandering CTS. In an abundance of caution and to be responsive to USFWS's request, a requirement for the presence of a biological monitor was included in the

mitigation measure. As presented in the DEIR, implementation of Mitigation Measures 3.3-1a and 3.3-1b will avoid or reduce potential construction impacts on this species. Additional language has been added to Mitigation Measures 3.3-1a. New text is indicated by double underlining. These mitigation measures will require avoiding and minimizing effects on aquatic resources during construction, conducting biological monitoring, and providing environmental awareness training to construction workers. Further, Mitigation Measures 3.3-13(a) through (d) have been incorporated to protect water quality and drainages during construction, which would avoid impacts to potential aquatic habitat of CTS on-site during construction.

With implementation of these mitigation measures, SMUD determined that the project would have no adverse effects on CTS. Further, no "take" of CTS is expected to occur, and thus an incidental take permit would not be required.[1] SMUD appreciates the continued involvement and input from CDFW staff.

Mitigation Measure 3.3-1a: Avoid and minimize impacts on California tiger salamander. SMUD will implement the following measures to avoid and minimize potential construction impacts on California tiger salamander:

- A qualified California tiger salamander biologist (defined as an individual with 3 years of experience conducting surveys for California tiger salamander and habitat in the project region) will be present on-site to conduct monitoring during project construction and decommissioning activities that disturb surface soils within 250 feet of drainages or any other aquatic features identified as suitable for California tiger salamander (AECOM 2018b).

- ~~To the extent possible ,~~ SMUD will confine all project-related parking, storage areas, laydown sites, equipment storage, and any other surface-disturbing activities to previously disturbed areas or areas that are not suitable habitat for California tiger salamander (AECOM 2018b). To the extent it is not possible to limit such activities to previously disturbed areas or areas that are not suitable habitat for California tiger salamander, the qualified biologist will perform a preconstruction survey within 48 hours before constructing project-related parking, storage areas, laydown sites, and equipment storage sites to ensure California tiger salamander are not present. If a California tiger salamander is found within the project area, SMUD will implement any actions necessary to avoid take of California tiger salamander including establishing appropriate buffer area and exclusion fencing in

[1] "Take" under California law is defined more narrowly to mean to: "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." (Fish & Game Code, § 86; *Environmental Council of Sacramento v. City of Sacramento* (2006) 142 Cal.App.4th 1018, 1040 (proscribed taking under California law requires "mortality," and "not the taking of habitat alone").)

consultation with USFWS and/or CDFW. If after avoidance measure cannot avoid take, SMUD shall seek an Incidental Take Permit from USFWS and/or CDFW, as appropriate, and implement any measures specified therein to reduce chances of take and minimize and fully mitigate any incidental take (including the measures in this MM 3.3-1a).

- All steep-walled holes or trenches that are 1 foot deep or greater and located within 250 feet of aquatic habitat that is suitable for CTS will have at least one escape ramp constructed of earthen fill or wooden planks. All such holes or trenches will be completely covered before sunset of each workday using boards or metal plates that are placed flush to the ground, and will be inspected before the start of daily construction activities.

- To prevent inadvertent entrapment of California tiger salamanders during project construction, maintenance, and decommissioning, all construction pipes, culverts, conduits, and other similar structures stored on-site overnight will be inspected before the structure is buried. Plastic monofilament netting will not be used for sediment control because it could pose an entrapment hazard to California tiger salamanders and other wildlife.

L1-3 Tricolored Blackbird. *The commenter states that tricolored blackbird, a State-listed threatened species, would experience loss of foraging habitat because of project construction and notes that take of tricolored blackbird from operation of the wind turbine generators (WTGs) would need to be authorized under appropriate State and federal permits. The commenter further states that the DEIR does not provide mitigation measures that would reduce the impacts on tricolored blackbird and other special-status bird species to less than significant and recommends that SMUD obtain an Incidental Take Permit for tricolored blackbird.*

As discussed on page 3.3-71 of the DEIR, tricolored blackbirds have been observed in the Solano County Wind Resource Area (WRA) during the nonbreeding season, typically in mixed flocks with other blackbird species (Estep Environmental Consulting 2018b). The only potentially suitable nesting habitat in the project area is the brackish marsh along the bank of the Sacramento River. No tricolored blackbird nesting colonies have been observed at this site, and this marsh would not be directly or indirectly affected by project construction or operation. No suitable breeding habitat for tricolored blackbird occurs on the Solano 4 Wind project sites.

As discussed on page 3.3-95 of the DEIR, the project would not directly affect freshwater marsh or riparian habitat, and the project's net permanent impact on vegetation communities would be only 43.82 acres for the 136m WTG option or 39.56 acres for the 150m WTG option. As discussed on under Foraging

Habitat starting on page 3.3-100 of the DEIR, the permanent loss of grassland foraging habitat resulting from the project would be small relative to the abundant grasslands in the project area, comprising less than 0.02 percent of the 2261 acres of grassland within the 2,549-acre project site. Furthermore, grasslands are the dominant habitat type throughout the WRA, an area of approximately 40,000 acres. Therefore, loss of foraging habitat for tricolored blackbird and other bird species would be less than significant because ample foraging habitat is available in the project area and in the WRA, and no mitigation is required.

The DEIR states on page 3.3-8 that tricolored blackbird fatalities could occur as a result of WTG collisions. Although a fatality is theoretically possible, no tricolored blackbird fatalities have been recorded in the WRA in more than 10 years of monitoring at eight wind farms (see Table 3.3-11 in the DEIR). SMUD has been coordinating with CDFW before and after publication of the DEIR and will continue to work with CDFW to determine whether an Incidental Take Permit for tricolored blackbird may be warranted for the project given the extremely low likelihood of impact.

L1-4 <u>Swainson's Hawk.</u> *The commenter states that Swainson's hawk, a State-listed threatened species, is known to nest near and forage on the project site and recommends that SMUD secure an Incidental Take Permit for this species. The commenter further recommends revisions to Mitigation Measures 3.3-4a, to require a qualified biologist to conduct preconstruction surveys before any project construction activities that may affect Swainson's hawk, as described in the Swainson's Hawk Technical Advisory Committee's (TAC) Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California 's Central Valley (CDFG 2000). The commenter further recommends revisions to Mitigation Measure 3.3-5, to require consultation with CDFW to determine ratios for off-site compensatory mitigation, noting that the proposed off-site mitigation ratio of 0.75:1 (mitigation: loss) in the DEIR may be insufficient to mitigate impacts to a less-than-significant level. The commenter requests that these mitigation lands be protected in perpetuity under a conservation easement and be managed in perpetuity through an endowment with an appointed land manager, and that the easement be held by a governmental entity, special district, non-profit organization, for-profit entity, person, or another entity, to hold title to and manage the property provided that the district, organization, entity, or person meets the requirements of Sections 65965–65968 of the Government Code, as amended. As the State's trustee for fish and wildlife resources, CDFW should be named as a third-party beneficiary under the conservation easement.*

The following revisions have been made to Mitigation Measure 3.3-4a, to reflect the commenter's recommendations that preconstruction surveys be conducted for Swainson's hawks in accordance with Swainson's Hawk Technical Advisory Committee guidance. New text is indicated by <u>double underlining</u>.

Mitigation Measure 3.3-4a: Avoid and minimize impacts on nesting raptors.

SMUD will implement the following measures to avoid and minimize impacts on nesting raptors:

- If construction activities are scheduled to occur during the breeding season (February 1–August 31), SMUD will conduct preconstruction surveys in all potential suitable raptor nesting habitat within 0.25 mile of proposed construction areas, including trees, shrubs, grasslands, and wetland vegetation. A qualified wildlife biologist shall determine the timing of preconstruction surveys based on the time of year and habitats that are present, and shall conduct the surveys no more than 30 days before construction. The 30-day survey period allows flexibility in order for surveys to be conducted when the likelihood of nest detection is maximized (e.g., during courtship, nest building, or when feeding young).

- SMUD will conduct nesting surveys for Swainson's hawks in accordance with the Swainson's Hawk Technical Advisory Committee (TAC) guidance published in 2000 (Recommended Timing and Methodology for Swainsons' Hawk Nesting Surveys in California's Central Valley). These methods will require surveys to start early in the nesting season (late March to early April). Surveys will be conducted within a minimum 0.25-mile radius of the project area or a larger area if necessary to identify potentially active nests potentially affected by project construction. As required by the TAC guidance, surveys will be conducted for at least two survey periods in the nesting season, immediately before the start of project construction activities. The qualified biologist conducting the surveys will have a minimum of 2 years of experience in implementing the TAC survey methodology.

- SMUD will maintain no-disturbance buffers around active raptor nests during the breeding season, or until it is determined the young have fledged. The no-disturbance zone shall include a 500-foot buffer around all raptor nests (including owls) and a 0.25-mile buffer for any active Swainson's hawk nests.

    - No-disturbance buffer sizes for non-special-status species raptors may be increased or decreased by a qualified biologist based on the sensitivity of the species of raptor, or based on site conditions that affect disturbance, such as the type of work, vegetation structure or density, and the line of sight between construction work and the nest to nesting raptors.

- No-disturbance buffer sizes for special-status raptor species may be increased or decreased by the qualified biologist in consultation with USFWS and CDFW as appropriate

- Buffers will not apply to construction-related traffic using existing roads that are not limited to project-specific use (e.g., county roads, highways, farm roads).

- If no nests are observed during the preconstruction survey but nesting occurs after the start of construction, it will be assumed that the individuals are acclimated to the level of ongoing disturbance.

- SMUD will clearly identify the locations of no-disturbance buffers (e.g., 250 feet, 500 feet, or 0.25 mile) on maps that will be made available to construction crews.

- Before and during construction, a qualified biologist shall identify all active nest setback areas on construction drawings, and if appropriate, shall flag or fence the setback areas.

- If construction is scheduled to occur during the non-nesting season, then no nesting bird surveys are required before construction activity begins, except provisions for surveys for burrowing owls outside the nesting season (September 1–January 31), as specified below in Mitigation Measure 3.3-4b.

The following revisions have been made to Mitigation Measure 3.3-5, to reflect the commenter's suggestions for additional text to clarify the requirements for the proposed Swainson's hawks foraging habitat mitigation lands.

Mitigation Measure 3.3-5: Acquire off-site mitigation to replace lost raptor foraging habitat.

SMUD will implement the following compensatory mitigation to offset net impacts on foraging habitat for breeding Swainson's hawks and other raptor species. Based on Swainson's hawk nest locations documented in recent years, no permanent project impacts on foraging habitat will occur within 1 mile of an active Swainson's hawk. Depending on whether the 150m WTG option or the 136m WTG option is selected, 25.38 acres or 30.49 acres of suitable Swainson's hawk foraging habitat will be required to mitigate this loss.

SMUD will mitigate the loss of Swainson's hawk foraging habitat in accordance with CDFW recommendations (DFG 1994) by providing mitigation lands as follows:

- Foraging habitat permanently lost within 5 miles of an active Swainson's hawk nest tree but more than 1 mile from the nest tree (either 25.38 acres or 30.49 acres, depending on the WTG option selected) will be replaced with 0.75 acre of mitigation land for each acre of foraging habitat permanently lost because of project construction (0.75:1 ratio). This ratio is consistent with recommendations in DFG 1994: "Projects within 5 miles of an active nest tree but greater than 1 mile from the nest tree shall provide 0.75 acres of habitat mitigation land for each acre of urban development authorized [0.75:1 ratio])." All mitigation lands protected under this requirement shall be protected in perpetuity in a form acceptable to CDFW (e.g., through fee title acquisition or conservation easement) on agricultural lands or other suitable habitats that provide foraging habitat for Swainson's hawk. The easement will be held by a governmental entity, special district, non-profit organization, for-profit entity, person, or another entity, to hold title to and manage the property provided that the district, organization, entity, or person meets the requirements of Sections 65965–65968 of the Government Code, as amended. As the State's trustee for fish and wildlife resources, CDFW is to be named as a third-party beneficiary under the conservation easement. SMUD will consult with CDFW in determining the suitability of the proposed mitigation lands to offset impacts of the project on Swainson's hawk foraging habitat.

- Management authorization holders/project sponsors will provide for management of the mitigation lands in perpetuity by funding a management endowment.

The DEIR states on page 3.3-117 that Swainson's hawk fatalities could occur as a result of WTG collisions. SMUD has been coordinating with CDFW before and after publication of the DEIR and will continue to work with CDFW. As described in Mitigation Measure 3.3-9(b), if unauthorized take of a federally listed or state-listed endangered or threatened avian or bat species occurs during project operation, SMUD will notify the appropriate agency (USFWS and/or CDFW) within 48 hours of the discovery, and will submit written documentation of the take to the appropriate agency within 2 calendar days. The documentation will describe the date, time, location, species, and if possible, cause of unauthorized take. Although not expected to occur, SMUD will implement any measures to avoid, minimize, or compensate for possible take in consultation with the USFWS and/or CDFW, including obtaining an Incidental Take Permit as appropriate. Also, see Mitigation Measure 3.3-9g *Implement Adaptive Management.*

L1-5 *Burrowing Owl. The commenter states that western burrowing owl is designated as a California Bird Species of Special Concern and is known to be present in the project area. The commenter observes that Mitigation Measure 3.3-4b proposes*

passive relocation to mitigate impacts on occupied burrows on the project site during the non-breeding season, and notes that CDFW does not consider exclusion of burrowing owls or "passive relocation" in and of itself sufficient to reduce the permanent loss of habitat to a less-than-significant level, and that all possible avoidance and minimization measures need to be considered before temporary or permanent exclusion and closure of burrows is implemented to avoid "take." The commenter further states that measures need to be included in the CEQA document to avoid and minimize loss of burrowing owl foraging habitat.

As described on page 3.3-71 of the DEIR, AECOM biologists conducted a habitat assessment for burrowing owl throughout the project site and found no evidence of owl occupancy. The only potential habitat for this species occurs in areas of nonnative annual grassland (456 acres of the 8,997-acre study area), and where agricultural land is left fallow or is grazed. As summarized in Table 3.3-7 in the DEIR, a maximum of 1.13 acres of annual grassland would be affected by the project (0.66 acre of permanent impacts, and 0.47 acre of temporary impacts, less than 0.0005 percent of the project area's annual grassland habitat), and a maximum of 5.56 acres of temporary impacts would occur on fallow agricultural lands (no permanent impacts would occur on fallow lands). Solano County has an abundance of land known to or with potential to support burrowing owls (Solano Habitat Conservation Plan, Solano County Water Agency, 2012). Because of the limited availability of suitable foraging habitat in the project area, the relatively small acreage of impacts to suitable habitat, and the relative abundance of foraging owl habitat in the County and the region, the impact of this loss of the marginal potential foraging habitat for burrowing owl would not be significant, and no mitigation is required.

As discussed on page 3.3-117 of the DEIR, the closest burrowing owl sighting relative to the project area occurred in 2014 and was recorded in Montezuma, approximately 1.5 miles from the project site, although SMUD staff members and consultants occasionally have observed evidence of burrowing owl over-wintering on the project site during the nonbreeding season. Although burrowing owl is unlikely to occur on the project site, implementation of Mitigation Measure 3.3-4b would require protocol-level preconstruction surveys for burrowing owl, and appropriate seasonal buffers would be established if a burrowing owl burrow is detected, in accordance with current CDFW guidelines.

Passive relocation also is discussed under Mitigation Measure 3.3-4b, regarding the unlikely event that a burrow would be detected that could be adversely affected by project construction. Mitigation Measure 3.3-4b has been revised to require consultation with CDFW to determine if passive relocation would be appropriate to avoid impacts on wintering or nesting burrowing owls, and to require mitigation at a 3:1 ratio to offset habitat loss. Mitigation Measure 3.3-4b has been revised as shown below.

Mitigation Measure 3.3-4b: Avoid and minimize impacts on burrowing owls.

To avoid and minimize impacts on burrowing owls, SMUD will implement the following guidelines adapted from the CDFW *Staff Report on Burrowing Owl Mitigation* (CDFG 2012):

- SMUD will have preconstruction burrowing owl surveys conducted in all areas that may provide suitable nesting habitat according to CDFW (CDFG 2012) guidelines. A qualified wildlife biologist shall conduct take avoidance surveys, including documentation of burrows and burrowing owls, in all suitable burrowing owl habitat within 500 feet of proposed construction. The take avoidance surveys, consisting of up to four visits, shall be initiated within 30 days of and completed at least 14 days before construction is initiated at a given location. In areas with burrows or refuge that could potentially support burrowing owls, a clearance visit shall be conducted within 24 hours of construction, including when construction work is reinitiated after a lapse of two or more weeks.

- SMUD will avoid disturbing active western burrowing owl nests and occupied nesting burrows.

    - In accordance with standard CDFW mitigation guidelines, SMUD and its construction contractor will avoid disturbance at occupied burrows in accordance with the following seasonal distance buffers for low, medium, and high levels of disturbance (CDFG 2012):

        - April 1 – August 15: 200 m (low), 500 m (medium), and 500 m (high)

        - August 16 – October 15: 200 m (low), 200 m (medium), and 500 m (high)

        - October 16 – March 31: 50 m (low), 100 m (medium), and 500 m (high)

    - These distances may be increased or decreased if, as determined by a qualified biologist, a different distance is required to ensure construction activities will not adversely affect occupied burrows or disrupt breeding behavior.

- If a qualified biologist, in consultation with CDFW, determines that construction could adversely affect occupied burrows during the September 1–January 31 nonbreeding season, ~~the qualified biologist~~ SMUD shall consult with CDFW to determine if ~~implement~~ passive relocation using one-way doors, in accordance with guidelines prepared

by the California Burrowing Owl Consortium (CDFG 2012), should be implemented, and if off-site compensatory mitigation is required to offset habitat loss. Compensatory mitigation for loss of burrowing owl habitat would require protection of suitable mitigation lands in perpetuity at a minimum 3:1 mitigation ratio. ~~and through coordination with CDFW~~.

L1-6 Raptor Foraging Habitat. The commenter notes that reclamation of roads is briefly discussed in association with Impact 3.3-5 (removal and modification of raptor nesting, foraging, and roosting habitat during project construction) and comments that the acreage of reclaimed roads is subsequently deducted from the total acreage of permanent impacts on foraging habitat. The commenter notes that habitat structure and the value of the reclaimed acreage is not described or mapped in the DEIR and expresses the opinion that these reclaimed lands may not be suitable for mitigation. The commenter further notes that counting reclaimed land as foraging land conflicts with Mitigation Measure 3.3-9a: Avoid and minimize operational impacts on birds and bats, which calls for maintaining a landscape in the project area that "does not encourage bird or bat occurrence" and implementing a prey management program to reduce prey that could attract eagles and other raptors. The commenter states that the reclaimed acreage should therefore not be considered as mitigation habitat nor should it be deducted from cumulative project impacts, without consultation with and concurrence of CDFW and USFWS.

As discussed on page 3.3-103 of the DEIR, SMUD would remove and restore 14.22 acres of access roads as part of the repowering process in the Solano 4 West portion of project site. The reclamation would involve removing gravel from the roadways and restoring roadway surfaces to support surrounding agricultural uses (grazing or dryland farming). Approximately 0.86 acre of this restoration area would overlap the project footprint for the 136m WTG option and 0.02 acre would overlap the project footprint for the 150m WTG option. This acreage would be reclaimed as part of project activities. Therefore, the net restoration acreages associated with each project option would be slightly less than 14.22 acres. This acreage would be restored to the same grazing and dryland farming conditions of the immediately adjacent habitat.

As stated on page 3.3-96 of the DEIR, most of these permanent impacts would occur on grazed, actively farmed, or fallow agricultural lands. Agricultural practices generally follow a 1- to 3-year crop rotation cycle (i.e., wheat [*Triticum asestivum*], barley [*Hordeum vulgare*], and oats [*Avena sativa*]), with predominantly cattle or sheep grazing and fallow years following planting. The Solano 4 West site was disked for planting in April 2018. Use of these reclaimed lands for grazing or dryland farming would not be considered mitigation for loss of raptor foraging habitat. Rather, because they would be used for grazing and dryland farming, as are the areas that would be developed on the property as part of the project, the reclaimed land would be deducted from the total acreage

of grazing and dryland farming. Thus, from a net value perspective, the DEIR's evaluation of existing and future foraging habitat for raptors remains accurate.

L1-7 *Operational Impacts on Birds and Bats. The commenter states that the DEIR estimates fatalities of 312 to 641 individual birds and 169 to 356 bats per year during project operation but notes that it is not clear how the mitigation measures would sufficiently reduce these impacts, and thus the commenter requests quantifiable and enforceable success criteria. The commenter also expresses the opinion that a single survey at all turbines is insufficient to determine mortality trends and validate preconstruction mortality estimates, and recommends annual mortality monitoring for a minimum of 5 years post-construction, followed by periodic monitoring every 3 years for the life of the WTG operation, because biological and operational conditions may change. The commenter recommends that survey methodology be developed in consultation with CDFW and USFWS, and include specific, quantifiable triggers for initiating implementation of Mitigation Measure 3.3-9h. The commenter further states that all mortalities on the project site need to be reported to CDFW and USFWS immediately on discovery.*

The predictions of future annual avian and bat fatalities on the project site, described in Table 3.3-11 and Table 3.3-12, respectively, are based on more than 10 years of data from post-construction monitoring studies, conducted at eight windfarms in the WRA (also see Table 3.3-10 regarding details of studies). The information from these studies is expected to reflect probable levels of project-related avian mortality because of the similarity in landscape, land use and habitat between the proposed project site and other projects in the WRA. While the estimates included in DEIR are high, it is so because the predicted number of annual mortalities in these tables are conservatively based on values ranging from the weighted average of all studies (lower number) to the maximum estimated mortality rate observed across all eight studies. This range is considered to be conservative because the maximum estimated mortality rates represent the extreme upper end of possible mortality rates, while the observed mortality rates would most likely be closer to the weighted mean and could be lower than that. As described in page 3.3-114 of the DEIR, most of the avian and bat mortalities would involve primarily common species, which are characterized as having relatively large and stable populations. Impacts on many of these species would be dispersed across populations in a broad geographic area, particularly for species that breed elsewhere and experience mortality when migrating through or overwintering on the project site. Therefore, the operational impact on common bird and bat species would be less than significant, and no mitigation is required.

The triggers for implementation of the actions described in Mitigation Measure 3.3-9h are stated in the measure and would include a project-related fatality of one or more federal or State-listed species or one or more State fully protected species. In addition, implementation of Mitigation Measure 3.3-9h would be

triggered if avian or bat mortality resulting from project operation exceeded the maximum estimated fatality rates shown in Tables 3.3-11 and 3.3-12 for special-status birds or bats as well as for common species.

The commenter's recommendation that five years of post-construction monitoring be conducted is a considerably greater monitoring effort than that recommended in California Guidelines for Reducing Impacts to Birds and Bats from Wind Energy Development (CEC and DFG 2007). Furthermore, monitoring studies have been conducted from eight other projects within the WRA for over 10 years and an abundance of post-construction monitoring information is already available for the WRA to inform adaptive management and mitigation for the Project.

The following revision has been made to Mitigation Measure 3.3-9b, to clarify that post-construction monitoring would not consist of a single survey at all turbines, but rather would require monthly surveys at all turbines for 1 year, and annual "clean sweep" surveys of all turbines for the life of the project.

Mitigation Measure 3.3-9b: Conduct bird and bat mortality monitoring.

To assess operational impacts on birds and bats and inform potential adaptive management and mitigation approaches, SMUD will conduct 1 year of postconstruction mortality monitoring in the project area, as follows:

- Qualified biologists shall monitor bird and bat mortality annually throughout the project area in accordance with the requirements set forth below, which incorporate guidelines described in SMUD's Solano BBCS (SMUD 2013), SMUD's Final Eagle Conservation Plan (SMUD 2014), and the California Guidelines for Reducing Impacts to Birds and Bats from Wind Energy Development (CEC and DFG 2007). The monitoring shall be conducted so that sufficient information is available to allow evaluation of WTG design characteristics and location effects that contribute to mortality, including information about the species, number, location, and distance of dead birds relative to WTG locations; availability of raptor prey species; and cause of bird and bat mortalities.

- Monitoring will be conducted <u>monthly</u> for 1 year at all turbines in the Solano 4 Wind Project area after the first delivery of power, and will include but not be limited to the following methods unless otherwise determined appropriate by SMUD:

    - The standard search radius will be 100 meters to account for terrain and WTG height.

- A sufficient number of "road and pad" searches will be conducted to 150 meters to determine the proportion of carcasses falling outside of the standard (100-meter) search radius.

- Searcher efficiency trials will be conducted for four seasons and will be sufficient to analyze differences in carcass size (small/medium/large) and vegetative cover.

- Data will be analyzed using procedures described by the California Energy Commission and CDFW (CEC and CDFG 2007), or newer approaches (e.g., General Estimator [Dalthorp et al. 2018], the Evidence of Absence model [Dalthorp et al. 2017]). The data analysis will address adjusted fatality rates annually, seasonally, and by species. An annual report will be prepared each year and a final report will be prepared after the 1-year monitoring period.

- If a carcass with a band is found in the project area, SMUD will promptly report the banding information to USFWS's Bird Banding Laboratory. SMUD will ~~coordinate~~consult with the laboratory to include any information provided by USFWS that is pertinent to avian mortality at the project site, if any, in the annual monitoring reports.

- After postconstruction monitoring data have been obtained, SMUD will review the data. In consultation with USFWS and CDFW, SMUD will determine which specific WTGs, if any, generate disproportionately high levels of avian mortalities (based on evidence of statistically significant higher levels of mortality relative to other WTGs), and whether adaptive management measures are needed to reduce or avoid mortalities at those specific WTGs.

- If unauthorized take of a federally listed or state-listed endangered or threatened avian or bat species occurs during project operation, SMUD will notify the appropriate agency (USFWS and/or CDFW) within 48 hours of the discovery, and will submit written documentation of the take to the appropriate agency within 2 calendar days. The documentation will describe the date, time, location, species, and if possible, cause of unauthorized take. Although not expected to occur, SMUD will implement any ~~actions required or recommended by~~ measures to avoid, minimize, or compensate for possible take in consultation with the USFWS and/or CDFW, including obtaining an Incidental Take Permit as appropriate as a result of the unauthorized take. Also see Mitigation Measure 3.3-9g *Implement Adaptive Management*.

- SMUD will design and conduct postconstruction mortality monitoring in a way that ensures at least a 50 percent chance of detecting mortality of large raptors (including golden eagle and Swainson's hawk) caused by

search area around the WTGs, the proportion of WTGs searched, or other standard parameters set forth above.

- After postconstruction monitoring activities, SMUD will conduct an annual "clean sweep" survey around all Solano 4 turbines each subsequent calendar year for the life of the project. In addition, SMUD will continue its current practice of incidental monitoring of the project area ~~will continue~~ through reporting of incidental fatalities or injured birds by on-site staff to the Avian Reporting System (see Mitigation Measure 3.3-9h, "Implement Adaptive Management to Address Disproportionate Mortality of Special-Status Birds or Bats," below). SMUD will also continue to report incidental fatalities or injured birds in compliance with its USFWS Special Purpose Utility Permit (Permit ~~#MB98730A~~ #MB189818-0). As required in Mitigation Measure 3.3-9b SMUD will notify the appropriate agency (USFWS and/or CDFW) within 48 hours of the discovery any unauthorized take of a federally listed or state-listed endangered or threatened species.

L1-8 *Filing Fees. The project would have an impact on fish and/or wildlife, and assessment of filing fees would be necessary. The fees would be payable on filing of the Notice of Determination by the Lead Agency and would serve to help defray the cost of environmental review by CDFW. Payment of the fee is required for the underlying approval for the project to be operative, vested, and final. (14 California Code of Regulations, Section 753.5; Fish and Game Code, Section 711.4; Public Resources Code, Section 21089).*

SMUD will remit the appropriate filing fee as required by Section 711.4 of the Fish and Game Code, and Section 21089 of the Public Resources Code upon filing of the NOD.

L1-9 *Conclusion. The commenter notes that the feasible mitigation measures described in the comment letter should be incorporated as enforceable conditions into the final CEQA document for the project and provides contact information for CDFW staff who are available to answer questions.*

SMUD will include all mitigation measures in the DEIR, including revisions made in the FEIR into the final mitigation monitoring and reporting program (MMRP). SMUD appreciates the input and information that CDFW has provided before and after publication of the DEIR and will continue to coordinate with CDFW as needed throughout the CEQA and permitting process for the project.

STATE OF CALIFORNIA—CALIFORNIA STATE TRANSPORTATION AGENCY Gavin Newsom, Governor

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Letter 2

Making Conservation a California Way of Life.

September 3, 2019

Mr. Ammon Rice
Sacramento Municipal Utility District
6201 S Street, MS H201
Sacramento, CA 95817

Re: Draft Environmental Impact Report - Solano 4 Wind Project; SCH# 2019012016

Dear Mr. Rice:

The California Department of Transportation, Division of Aeronautics (Division), reviewed the above-referenced document with respect to airport-related noise and safety impacts and regional aviation land use planning issues pursuant to the California Environmental Quality Act (CEQA). The Division has technical expertise in the areas of airport operations safety, noise, and airport land use compatibility. We are a funding agency for airport projects and we have permit authority for public-use and special-use airports and heliports. The following comments are offered for your consideration.

The Solano 4 Wind Project (project) proposes the construction of up to 22 new wind turbine generators (WTGs) within the Solano County Wind Resource Area in southern Solano County. The closest of the two project areas is located approximately 15 miles southeast of Travis Air Force Base (Travis AFB), and five miles southwest of Rio Vista Municipal Airport. The existing WTGs will be decommissioned, and new, technologically advanced WTGs will be constructed in the project areas.

2-1

In accordance with CEQA, Public Resources Code Section 21096, the California Airport Land Use Planning Handbook (Handbook) must be utilized as a resource in the preparation of environmental documents for projects within airport land use compatibility plan (ALUCP) boundaries or if such a plan has not been adopted, within two miles of an airport. The Handbook is a resource that should be applied to all airports and is available on-line at: https://dot.ca.gov/programs/aeronautics/airport-land-use-planning

2-2

The project site is completely within the Travis AFB ALUCP boundaries as adopted by the Solano County Airport Land Use Commission (ALUC). Therefore, in accordance with the Handbook and relevant sections of Article 3.5 of the State Aeronautics Act (SAA) in the Public Utilities Code, this project

2-3

"Provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability"

must be referred to the ALUC for a consistency determination with their ALUCP. The ALUC has prepared and adopted an ALUCP for Travis AFB pursuant to the SAA and the Handbook. Despite the assertion in the Draft Environmental Impact Report, that the Federal Aviation Administration (FAA) aeronautical study and determination of no hazard would preempt the ALUC's policies preventing aviation radar system interference, the ALUC could still find this project inconsistent with their ALUCP. An ALUC review and consistency determination is required to be a properly noticed and public process.

2-3 Cont'd

Also, the FAA aeronautical study states clearly that it does not relieve sponsors from compliance with other laws and regulations of any federal, state or local governing body.

This project is not exempt from ALUC review under the SAA, as Government Code section 53091(d) and (e) expressly refers to building and zoning ordinances of a *county* and *city*, and thus inapplicable. Unlike a county and the city, the ALUC was established, pursuant to the SAA for the purposes of ensuring the orderly expansion of airports and promulgating appropriate land use measures in Solano County. (see section 21670) The ALUC is a statutorily created, quasi-legislative, public administrative agency that is responsible for conducting airport land use compatibility planning and preventing the creation of new noise or safety problems in the vicinity of public use airports. An ALUC is not a county or city as defined in Government Code section 53091(d) and (e).

2-4

The SAA mandates the ALUC to prepare and adopt an airport land use compatibility plan, as it is one of the ALUC's primary duties. The ALUCP shall be guided by the height, use noise, safety and density criteria contained in the Handbook, a handbook published by the Division; and not by a county or a city. The Division reviews the ALUCP for compliance.

2-5

If the ALUC determines that the proposed action is inconsistent with the ALUCP, the referring agency shall be notified. The local agency may, after a public hearing, propose to overrule the ALUC by a two-thirds vote of its governing body after it makes specific findings. At least 45 days prior to the decision to overrule the ALUC, the local agency's governing body shall provide to the ALUC and the Division a copy of the proposed decision and findings. The Division reviews and comments on the specific findings a local agency intends to use when proposing to overrule an ALUC. The Division specifically looks at the proposed findings to gauge their relationship to the overrule. Also, pursuant to the PUC 21670 et seq., findings should show evidence that the local agency is minimizing "...the public's exposure to excessive noise and safety hazards within areas around public airports to the extent that these areas are not already devoted to incompatible uses."

2-6

In addition to submitting the proposal to the ALUC, it should also be coordinated with Travis AFB staff to ensure that the proposal will be compatible with future as well as existing airport operations. 2-7

The protection of airports from incompatible land use encroachment is vital to California's economic future. The public-use and military airports in Solano County are economic assets that should be protected through effective airport land use compatibility planning and awareness. Although the need for compatible and safe land uses near airports is both a local and State issue, airport staff, airport land use commissions and airport land use compatibility plans are key to protecting an airport and the people residing and working in the vicinity of an airport. Consideration given to the issue of compatible land uses in the vicinity of an airport should help to relieve future conflicts between airports and their neighbors. 2-8

These comments reflect the areas of concern to the Division with respect to airport-related noise, safety, and regional land use planning issues. Thank you for the opportunity to review and comment on this proposal. If you have any questions, please contact me at (916) 654-6223, or by email at philip.crimmins@dot.ca.gov.

Sincerely,

PHILIP CRIMMINS
Aviation Environmental Specialist

c: State Clearinghouse, Solano County ALUC, Travis AFB, FAA

Letter 2-1 Response	Philip Crimmins, Aviation Environmental Specialist California Department of Transportation, Division of Aeronautics October 3, 2019

L2-1 Introduction to the Division; Brief Description of the Project. The commenter describes the California Department of Transportation, Division of Aeronautics (Division) as having technical expertise in the areas of airport operations safety, noise, and airport land use compatibility. The commenter states that the Division is a funding agency for airport projects and has permit authority for public-use and special-use airports and heliports. The commenter includes a brief description of the proposed Solano 4 Wind Project (project).

The commenter has provided introductory information describing the role of the Division, and its permit authority. The commenter has also provided a brief overview of the project. These comments are not directed at the adequacy of the DEIR, nor do they contain an argument raising significant environmental issues. No further response is required.

L2-2 California Airport Land Use Planning Handbook (Handbook). The commenter states that the Handbook must be used when preparing environmental documents for projects within airport land use compatibility plan (ALUCP) boundaries, or, if such a plan has not been adopted, within two miles of an airport.

As discussed in DEIR Section 3.9.1, page 3.9-1, SMUD consulted the California Airport Land Use Planning Handbook during preparation of the DEIR. The Handbook provides general guidance regarding development of wind energy facilities in the vicinity of airports and describes the role of airport land use commissions in planning for activities and projects near airports. As stated on page 3.9-1, the Handbook guidance was considered during preparation of the DEIR. Please also refer to the Master Response for additional detail on the project planning process employed by SMUD for the project. No revisions to the DEIR are necessary.

L2-3 Project Site within Travis AFB ALUCP boundaries. The commenter states that because the project site is within the Travis AFB ALUCP boundaries, the project must be referred to the Solano County Airport Land Use Commission (ALUC) for review and determination as to whether it is consistent with their airport land use compatibility plan (ALUCP). The commenter notes that although the DEIR

concludes that the Federal Aviation Administration (FAA) aeronautical study and determination of no hazard would preempt the ALUC's policies preventing aviation radar system interference, the ALUC could still find this project inconsistent with their ALUCP. The commenter states that an ALUC review and consistency determination is required to be a properly noticed and public process.

Although SMUD maintains that ALUC consistency determination process does not apply to this project, as noted in response to comment L4-2 of this Final EIR, on April 1, 2021, SMUD submitted an application for advisory review of ALUC consistency determination of the project. On May 20, 2021, after a noticed public hearing, the ALUC determined that the project was inconsistent with the LUCP, solely on the basis that the project's wind turbine generator (WTG) towers will be within line-of-sight of Travis AFB's Digital Airport Surveillance Radar (DASR) (See Appendix A for Westslope 2018a and Transcript of ALUC hearing May 20, 2021). Given that the ALUC determined that the project is inconsistent with the LUCP, after a public hearing, the SMUD Board of Directors may, consistent with evidence in the record before it, decide whether to overrule the ALUC determination after making the requisite findings under the State Aeronautics Act (SAA). SMUD already notified the ALUC and the Division on July 2, 2021, which is at least 45 days prior to its proposed decision to overrule the ALUC, and provided a copy of both the proposed decision and the supporting findings.

Please also refer to Downey Brand's letter dated April 26, 2019 in response to the Solano County ALUC comments on SMUD's Notice of Preparation for the Solano 4 Wind Project (NOP) included in Appendix C of this FEIR for additional information regarding SMUD's position on this issue.

L2-4 *No Exemption from ALUC Review. The commenter notes that the Federal Aviation Administration (FAA) aeronautical study states that it does not exempt sponsors from complying with other laws and regulations of any federal, state, or local governing body. The commenter states that the project is not exempt from ALUC review under the State Aeronautics Act (SAA), because Government Code sections 53091(d) and (e) expressly refer to the building and zoning ordinances of a county and city. The commenter points out that an ALUC is neither a county or a city.*

Please refer to Downey Brand's letter dated April 26, 2019 in Appendix C of this Final EIR, prepared in response to Solano County ALUC comments on

SMUD's NOP for the Solano 4 Wind Project for the project's exemption from ALUC review.

As stated in the Downey Brand letter, SMUD's wind turbine facilities are exempted from the ALUC provisions because under subdivisions (d) and (e) of Section 53091 of the Government Code, the zoning and building ordinances of a county or city *shall not* apply to the location or construction of facilities for the generation of electrical energy. SMUD, as a municipal utility district, is a local agency for purposes of Section 53091. (See *City of Lafayette v. East Bay Municipal Utilities District* (1993) 16 Cal.App.4th 1005, 1012; 78 Cal.Atty.Gen.Ops. 31 (1995); see also *Center for Biological Diversity v. County of San Bernardino* (2016) 247 Cal.App.4th 326, 344 fu.4 [county did not have authority to apply building and zoning regulations to water project proposed by local water agency pursuant to Sections 53091 and 53096].) Because a wind turbine facility is an electrical generation facility, the project qualifies for the exemptions under subdivisions (d) and (e) of Section 53091.

Further, the ALUC's authority in drafting the LUCP provisions are derived from Solano County's police powers and zoning authorities. Because the exemptions within Section 53091 are narrower and more specific than those announced in the SAA provisions, the Section 53091 exemptions control. Thus, SMUD's wind turbine facilities are exempt from the LUCP provisions.

Please also see Response to Comments L4-1 and L4-4.

The comment does not raise any issues concerning the adequacy of the DEIR or its analysis of the physical environmental impacts of the project. No revisions to the DEIR are necessary.

L2-5 ALUCP Must Comply with Division Specifications. The commenter states that the ALUC is required by the SAA to prepare and adopt an airport land use compatibility plan. The commenter further notes that the ALUCP must comply with the height, use noise, safety, and density criteria contained in the Division handbook, rather than the criteria of a county or city. The commenter states that the Division reviews the ALUCP for compliance.

The commenter provides information regarding ALUC requirement but raises no issues regarding the adequacy of the DEIR or any issues of environmental concern. No revisions are necessary. Further, as discussed above, please refer to the Downey Brand letter dated April 26, 2019 in Appendix C of this Final EIR, prepared in response to Solano County ALUC comments on SMUD's NOP regarding why the ALUC's powers in approving an LUCP is derived from and tantamount to that the land use authorities exercised by a county or a city in enacting zoning ordinances and other land use provisions.

L2-6 Process for a Local Agency to Overrule an ALUC. The commenter states that if the ALUC finds that the proposed action is inconsistent with the ALUCP, the local agency is notified. The commenter notes that the local agency may, after a public hearing and making specific findings, propose to overrule the ALUC by a two-thirds vote of its governing body. The commenter states that at least 45 days prior to the decision to overrule the ALUC, the local agency's governing body shall provide to the ALUC and the Division a copy of the proposed decision and findings. The commenter further describes the process, stating that the Division reviews and comments on the specific findings the local agency plans to use when proposing to overrule an ALUC. According to the commenter, per PUC 21670, the findings should provide evidence that the local agency is minimizing the public's exposure to excessive noise and safety hazards within areas around public airports "… to the extent that these areas are not already devoted to incompatible uses."

Please refer to response to comment L2-3 above and to the Master Response. The comment does not question the analysis and conclusions in the DEIR that the project's impacts related to noise and safety hazards will remain less than significant, with mitigation incorporated.

L2-7 Coordination with Travis AFB. The commenter states that the proposed action should also be coordinated with Travis Air Force Base (AFB) staff to ensure its compatibility with existing and planned future operations.

Please refer to the Master Response. SMUD has undertaken extensive coordination with Travis AFB in planning the project and has been actively engaged in addressing these issues with Travis AFB since inception of the project. The FAA Determination of No Hazard (DNH) extension process resulted in the formation of a Mitigation Response Team (MRT) with Travis AFB as required by the Department of Defense (DOD) Military Aviation and Installation Assurance Siting Clearinghouse (the "DOD Siting Clearinghouse")

mission compatibility evaluation process as documented in Part 211 of Title 32 of the Code of Federal Regulations (Military Aviation and Installation Assurance Siting Clearinghouse, accessed 2021). Travis AFB submitted its Solano 4 Wind Project Operational Risk Assessment to the Department of Defense (DOD) on January 11, 2021. SMUD received the requested extensions for the nineteen (19) Determinations of No Hazard (DNH) for the project on January 28, 2021. The result of the MRT review was a conclusion by the 60th Air Mobility Wing of "[a]s proposed, Solano 4 Wind project should have minimal negative impact on Travis Operations" (Simmons 2021). SMUD also received a letter dated February 9, 2021 from Steven J. Sample, Executive Director, Military Aviation and Installation, Assurance Siting Clearinghouse stating that as a result of discussions between SMUD and the U.S. Air Force, the construction of the project, submitted to the FAA on April, 17, 2020, will not present an adverse impact to military operations (See FAA Determinations, and letters from U.S. Colonel Corey Simmons and Steven J. Sample, in Appendix B). Based on substantial evidence, including the evaluation and analysis of its own aeronautics' experts, SMUD has determined that there will be no significant safety or other impacts to Travis AFB arising from this project.

L2-8 Reducing Land Use Conflicts in Areas Near Airports. The commenter states that it is important to protect California airports and the economic benefits they provide from incompatible land use encroachment. The commenter asks that consideration be given to the issue of compatible land uses in areas near airports in order to lessen future conflicts.

The proposed project is located with the Solano Wind Resource Area and has been designed to avoid or minimize any possible impacts related to airport operations and safety hazards. In particular, both the existing and replacement wind turbines have proven to be compatible with existing airport operations. Wind power generation has been occurring in the Solano Wind Resource Area for many years and there is no evidence that this have resulted in harm to local economic benefits or encroachment on other land uses. Please also see the Master Response. No revisions to the DEIR are necessary.

Letter 3

DELTA STEWARDSHIP COUNCIL
A California State Agency

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September 6, 2019

Ammon Rice
Sacramento Municipal Utility District
6201 S Street, MS H201
Sacramento, CA 95817

Via email: Ammon.Rice@smud.org

RE: Comments on the Draft Environmental Impact Report for the Solano 4 Wind Project, SCH#2019012016

Dear Mr. Rice:

Thank you for the opportunity to comment on the Sacramento Municipal Utility District (SMUD) Solano 4 Wind Draft Environmental Impact Report (DEIR). The Delta Stewardship Council (Council) previously sent a letter with comments on the Notice of Preparation (NOP) for the Project on February 6, 2019. Thank you for acknowledging these comments in your Scoping Report (Appendix A to the DEIR), and for meeting with Council staff to discuss this project on April 17, 2019. The Council recognizes SMUD's objectives to diversify its energy portfolio, increase the supply of renewable energy sources, and support the long-term viability of agriculture in the Montezuma Hills. 3-1

The Council is an independent State of California agency established by the Sacramento-San Joaquin Delta Reform Act of 2009 (SBX7 1; Delta Reform Act). As stated in the Delta Reform Act, the State has coequal goals for the Delta: providing a more reliable water supply for California and protecting, restoring, and enhancing the Delta ecosystem. The coequal goals shall be achieved in a manner that protects and enhances the unique cultural, recreational, natural resource, and agricultural values of the Delta as an evolving place (Water Code §85054). The Council is charged with furthering California's coequal goals for the Delta through the adoption and implementation of the Delta Plan, regulatory portions of which became effective on September 1, 2013. 3-2

Covered Action Determination and Certification of Consistency with the Delta Plan

Through the Delta Reform Act, the Council was granted specific regulatory and appellate authority over certain actions that take place in whole or in part in the Delta and Suisun Marsh, which are referred to as "covered actions".

"Coequal goals" means the two goals of providing a more reliable water supply for California and protecting, restoring, and enhancing the Delta ecosystem. The coequal goals shall be achieved in a manner that protects and enhances the unique cultural, recreational, natural resource, and agricultural values of the Delta as an evolving place."

– CA Water Code §85054

The Council exercises that authority through development and implementation of the Delta Plan. State and local agencies are required to demonstrate consistency with 14 regulatory policies identified in the Delta Plan when carrying out, approving, or funding a covered action.

Based on the project description in the DEIR, the proposed project appears to meet the definition of a covered action as set forth in Water Code section 85057.5(a) because it:

1. Would occur in whole or in part within the boundaries of the Legal Delta (Water Code section12220) or Suisun Marsh (Public Resources Code section 29101). The project site includes two subareas owned by SMUD: Solano 4 East and Solano 4 West. Based on Exhibit 2-2 in the DEIR Project Description (DEIR, p. 2-3), portions of the Solano 4 West site are located within the boundaries of the Legal Delta and Suisun Marsh.
2. Would be carried out, approved, or funded by the State or a local public agency. SMUD, a local public agency, is the lead agency for this project.
3. Would have a significant impact on the achievement of one or both of the coequal goals or the implementation of a government-sponsored flood control program to reduce risks to people, property, and State interests in the Delta. It appears that this project could have a significant impact on the achievement of the coequal goal of ecosystem restoration.
4. Would be covered by one or more of the regulatory policies contained in the Delta Plan (23 CCR sections 5003-5015). Delta Plan regulatory policies that may apply to the proposed project are discussed in the next section, below.

3-2 Cont'd

It is the State or local agency approving, funding, or carrying out the project that ultimately must determine if that project is a covered action and, if so, file a Certification of Consistency with the Delta Plan (23 CCR section 5001(j)(1)(E)(3)) prior to project implementation. The DEIR lists a variety of federal, state, and local agency permits and approvals required for the proposed project (Table 2-4, page 2-27) but does not identify a Certification of Consistency with the Delta Plan among these requirements. In the Final EIR, please add a reference to the Council's Certification of Consistency process in Table 2-4.

3-3

In addition, the DEIR does not identify the Delta Plan in its description of the regulatory setting within any resource section. Please add a description of the Delta Plan to the regulatory setting discussion within the Biological Resources, Geology and Soils, Hydrology and Water Quality, and Land Use sections of the Final EIR, in addition to other relevant resource sections.

3-4

Delta Plan Regulatory Policies

The following section describes regulatory Delta Plan policies that may apply to the proposed project based on the available information in the DEIR. This information is offered to assist SMUD to describe the relationship between the proposed project and the Delta Plan in the EIR, to ensure that the EIR supports the project's eventual Certification of Consistency.

3-5

General Policy 1: Detailed Findings to Establish Consistency with the Delta Plan Delta Plan Policy **G P1** (23 CCR section 5002) specifies what must be addressed in a Certification of Consistency by a proponent of a project that is a covered action. The following is a subset of these requirements which a project must fulfill to demonstrate consistency with the Delta Plan.

Best Available Science

Delta Plan Policy **G P1(b)(3)** (23 CCR section 5002(b)(3)) states that covered actions must document use of best available science as relevant to the purpose and nature of the project. The regulatory definition of "best available science" is provided in Appendix 1A of the Delta Plan (http://deltacouncil.ca.gov/pdf/delta-plan/2015-appendix-1a.pdf). Six criteria are used to define best available science: relevance, inclusiveness, objectivity, transparency and openness, timeliness, and peer review. (23 CCR section 5001(f)). For this project, this policy generally requires that the process used by SMUD to analyze project alternatives, impacts, and mitigation measures for the project be clearly documented and effectively communicated to foster improved understanding and decision making.

Mitigation Measures

Delta Plan Policy G P1(b)(2) (23 CCR section 5002(b)(2)) requires that covered actions not exempt from CEQA must include all applicable feasible mitigation measures adopted and incorporated into the Delta Plan as amended April 26, 2018 (unless the measures are within the exclusive jurisdiction of an agency other than the agency that files the certification of consistency), or substitute mitigation measures that the agency finds are equally or more effective. These mitigation measures are identified in Delta Plan Appendix O (http://deltacouncil.ca.gov/pdf/delta-plan/2018-appendix-o-mitigation-monitoring-and-reporting-program.pdf). The DEIR identifies several significant and potentially significant impacts on Aesthetics, Air Quality, Biological Resources, Cultural Resources, Hazards and Hazardous Materials, Hydrology and Water Quality, and Transportation, and proposes a number of measures to mitigate these impacts. Council staff recommends that SMUD review the consistency and effectiveness of proposed mitigation measures with corresponding applicable and feasible Delta Plan mitigation measures for each of these impacts. (Please note that this regulatory requirement has been amended since SMUD issued the NOP for this project.)

3-5
Cont'd

Ecosystem Restoration Policy 3: Protect Opportunities to Restore Habitat

Delta Plan Policy **ER P3** (23 CCR section 5007) states that within priority habitat restoration areas depicted in Appendix 5, significant adverse impacts to the opportunity to restore habitats at appropriate elevations (as described in 23 CCR section 5006) must be avoided or mitigated. Appendix 5 is available at http://deltacouncil.ca.gov/pdf/delta-plan/2013-appendix-b-combined.pdf (starting on page 72). Based on Exhibit 2-2 in the DEIR Project Description

(DEIR, p. 2-3) portions of the Solano 4 West site are located within the boundaries of the Suisun Marsh Priority Habitat Restoration Area (PHRA).

Exhibit 2-2 does not identify any project components (e.g., turbines, access roads, collection and home run lines) within the Suisun Marsh PHRA, but the DEIR states that "the final locations of [wind turbine generators] would be determined after SMUD completes the procurement process" (Page 2-10), leaving open the possibility that these primary project components could ultimately be sited within the PHRA. In addition, the DEIR discusses other potential project elements (including meteorological towers, road improvements, and staging areas) that are not mapped. Therefore, the Council is unable to ascertain whether such features would be sited within the PHRA. Please include a discussion in the Final EIR that clarifies whether any project components or temporary project elements would be located within the Suisun Marsh PHRA, and if so, how any adverse impacts to the opportunity to restore habitats at appropriate elevations within the PHRA would be avoided or mitigated. Regardless of the proposed location of project components, SMUD should consider whether significant adverse impacts to the opportunity to restore habitat at appropriate elevations could occur within the Suisun Marsh PHRA due to construction activities or operation of project components.

3-5 Cont'd

Please discuss in the Final EIR whether the project could result in significant adverse impacts to the opportunity to restore habitat within the Suisun Marsh PHRA, and if so, how those impacts would be avoided or mitigated. Specifically, in the Biological Resources section, please identify whether any of the freshwater wetland acreage that would be impacted by project construction (as identified in Table 3.3-7) is located within the Suisun Marsh PHRA. Also, in the Geology and Soils section, please identify whether Impact 3.5-1: Substantial soil erosion or loss of topsoil could occur within and/or affect wetland or marsh habitat within the Suisun Marsh PHRA.

3-6

Ecosystem Restoration Policy 5: Avoid Introductions of and Habitat Improvements for Invasive Nonnative Species

Delta Plan Policy **ER P5** (23 CCR section 5009) requires that the potential for new introductions of or habitat improvements for invasive, nonnative species must be fully considered and avoided or mitigated in a way that appropriately protects the ecosystem. This policy applies to projects that have a reasonable probability of introducing or improving habitat conditions for nonnative invasive species. The Biological Resources section of the DEIR identifies Impact 3.3-12: Indirect Impacts on Riparian Habitat as less than significant with implementation of Mitigation Measures 3.3-12a through 3.3-12d. Impact 3.3-12 states that, "Project construction and operation could indirectly affect riparian habitat by altering existing topography and hydrology, causing fugitive dust to accumulate on vegetation, and potentially contributing to the introduction and spread of nonnative invasive plant species" [emphasis added] (DEIR, p. 3.3-128). The DEIR also states that "[o]perational impacts, including the potential for introduction and spread of invasive plant species, would be addressed by continuing implementation of SMUD's land management plan, which includes management of

3-7

Ammon Rice
Comments on the Draft Environmental Impact Report for the Solano 4 Wind Project
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invasive weeds (Althouse and Meade 2018)." (DEIR, pp. 3.3-128 – 3.3-129) Mitigation Measure 3.3-12c also describes a reclamation and revegetation plan that SMUD would prepare prior to implementation of the project. That plan would draw upon the goals and objectives of SMUD's land management plan, and would require, among other things, weed control measures which may include cultural, mechanical, and/or chemical methods (DEIR, pp. 3.3-130 – 3.3-131).

The only riparian habitat discussed or described in the DEIR appears to be located within the Solano 4 East subarea which is located outside of the boundaries of the Legal Delta and Suisun Marsh (DEIR, pp. 3.3-18 – 3.3-19). However, portions of the Solano 4 West subarea that fall within the boundaries of the Legal Delta and Suisun Marsh include other sensitive habitat types that could be susceptible to the introduction and spread of nonnative invasive plant species through the same types of construction activities that could lead to potentially significant impacts described for Impact 3.3-12. Based on Exhibit 3.3-1, these existing habitat types include estuarine and marine wetlands, freshwater wetlands, tidal brackish wetlands, and tidal marsh upland (DEIR, p. 3.3-17).

Please revise this impact discussion in the Final EIR to discuss the potential for introduction and habitat improvements for invasive, nonnative species in the Solano 4 West subarea in greater detail, describing how implementation of SMUD's land management plan and Mitigation Measure 3.3-12c would avoid introduction and habitat improvements for invasive, nonnative species, or mitigate these potential impacts in a manner that appropriately protects the ecosystem. Also, please describe specifically how SMUD's land management plan and Mitigation Measure 3.3-12c are consistent with Delta Plan Mitigation Measure 4-1, as described in the Delta Plan Mitigation Monitoring and Reporting Program (MMRP) (http://deltacouncil.ca.gov/pdf/delta-plan/2018-appendix-o-mitigation-monitoring-and-reporting-program.pdf).

3-7 Cont'd

Closing Comments

We invite SMUD to continue to engage with Council staff in early consultation. We are available to discuss topics outlined in this letter as you proceed in the next stages of your project and approval processes. Please contact Avery Livengood at (916) 445-0782 (Avery.Livengood@deltacouncil.ca.gov) with any questions.

3-8

Sincerely,

Jeff Henderson, AICP
Deputy Executive Officer
Delta Stewardship Council

Letter 3-1 Response	Jeff Henderson, AICP, Deputy Executive Officer Delta Stewardship Council September 6, 2019

L3-1 *Introduction. The commenter thanks SMUD for acknowledging the Delta Stewardship Council (Council) NOP letter and discusses SMUD's objectives for the Solano 4 Wind Project.*

These comments are not directed at the adequacy of the DEIR, nor do they contain an argument raising significant environmental issues. No further response is required.

L3-2 *Consistency with Delta Plan. The commenter discusses the role of the Council in implementing the Delta Plan, and notes that the Delta Reform Act of 2009 requires local agencies to demonstrate consistency with regulatory policies identified in the Delta Plan when carrying out a covered action. The commenter states that the project appears to meet the definition of a covered action and notes that SMUD must make that determination. If SMUD determines that the project is a covered action, the commenter states that SMUD must file a Certification of Consistency with the Delta Plan and add a description of the Delta Plan to the regulatory setting discussion in the Biological Resources, Geology and Soils, Hydrology and Water Quality, and Land Use sections of the FEIR, in addition to other relevant resource sections.*

SMUD has determined that the project is not a covered action under the Delta Plan because it will not have an impact on the achievement of one or both of the coequal goals of the Delta Reform Act or the implementation of government-sponsored flood control programs to reduce risks to people, property, and state interests in the Delta. As discussed below in responses to comments L3-5 through L3-7, project construction activities and project operation will not result in direct or indirect impacts on estuarine and marine wetlands, tidal brackish wetlands, or tidal marsh uplands, will not interfere with opportunities to restore habitat in the Suisun Marsh, and will have no impact on the Delta Plan's goals of achieving ecosystem restoration.

L3-3 *Certificate of Consistency. The commenter states that if SMUD determines the project is a covered activity SMUD must file a Certification of Consistency with the Delta Plan with the Council prior to project implementation. The commenter requests addition of a reference to the Council's Certification of Consistency process in Table 2-4.*

As discussed in response to comment L3-2, SMUD has determined that the project is not a covered activity, therefore no changes are needed to Table 2-4.

L3-4 *Description of Delta Plan in DEIR. The commenter requests the FEIR be revised to add a description of the Delta Plan to the regulatory setting discussion in the Biological Resources, Geology and Soils, Hydrology and Water Quality, and Land Use sections of the FEIR, in addition to other relevant resource sections.*

As discussed above in the response to comment L3-2 SMUD has determined that the project is not a covered activity under the Delta Plan and therefore no discussion of the Delta Plan is needed in the of any of the resource sections of the FEIR.

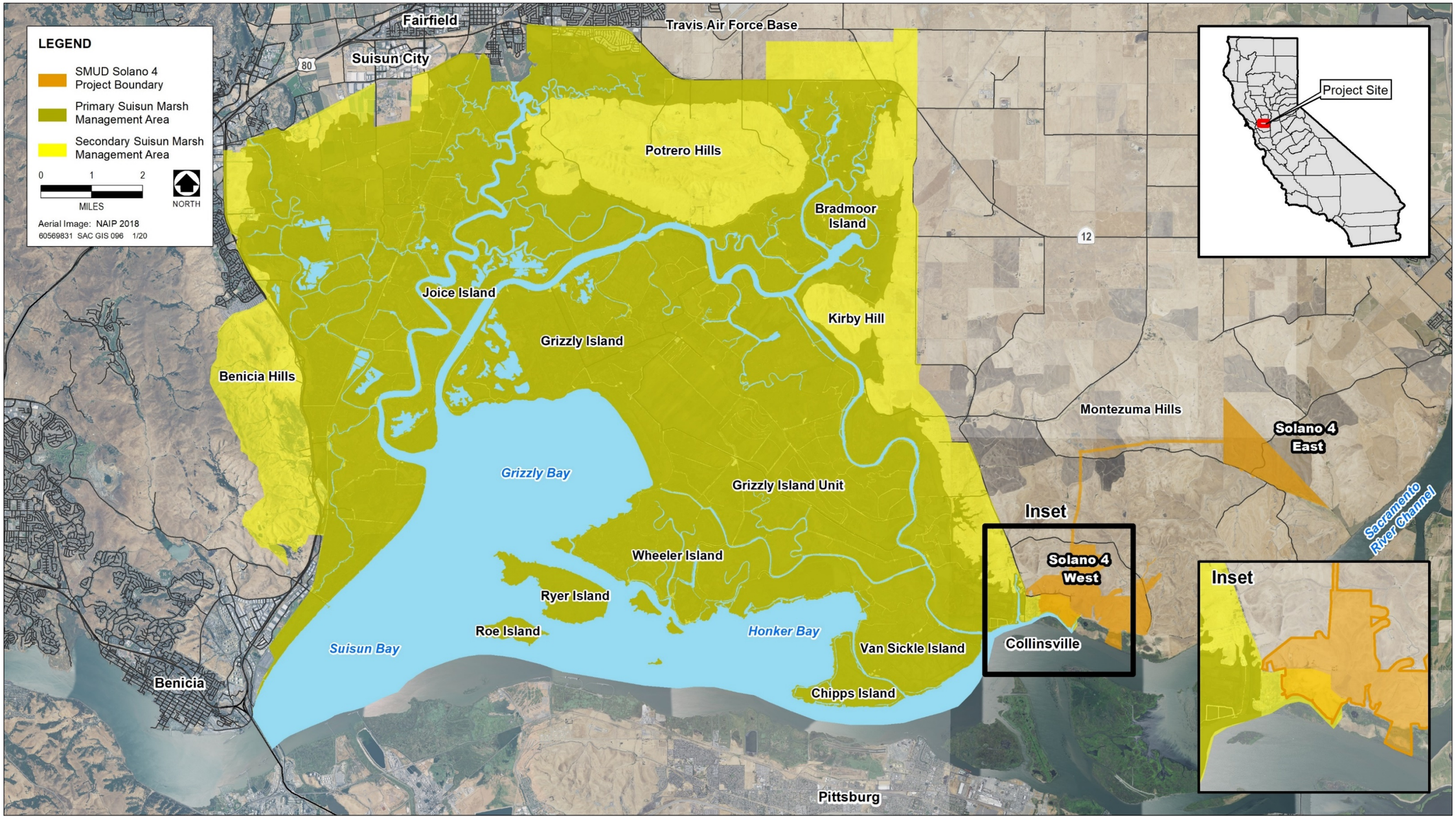
L3-5 *Delta Plan Regulatory Policies. The commenter provides a description of regulatory Delta Plan policies that the commenter believes would be relevant to the proposed project if SMUD determines that the project is a covered activity. The commenter references Ecosystem Restoration Policy 3: Opportunities to Restore Habitat and cites exhibit 5-1 in Appendix 5 which shows multiple areas in the Delta recommended for prioritization and implementation of habitat restoration projects. These areas include the Suisun Marsh, which is adjacent to the project site. The commenter requests clarification as to whether any project components or temporary project elements would be located within the Suisun Marsh Priority Habitat Restoration Area (PHRA), and an assessment as to whether the project could adversely affect opportunities for restoration.*

As shown in Figure 1, the western portion of SMUD's Solano 4 Wind project area overlaps with 182.2 acres of the Secondary Suisun Marsh Management Area. This is part of the property that SMUD owns; however, no components of the proposed project (turbines, collection/home run lines, access/local roads, or staging areas) are within the Suisun Marsh PHRA and no temporary or permanent construction and operational impacts will occur within this area (see DEIR 2.5 Project Characteristics and Components, pages 2-8 through 2-27). Thus, construction and operation of the proposed project will not affect ongoing and future planned restoration activities in the Suisun Marsh. No revisions to the DEIR are necessary.

L3-6 *Suisun Marsh PHRA. The commenter asks for a discussion in the Final EIR whether the project could result in significant adverse impacts to the opportunity to restore habitat within the Suisun Marsh PHRA, and if so, how those impacts would be avoided or mitigated. Specifically, the commenter requests that in the Biological Resources section, SMUD identify whether any of the freshwater wetland acreage that would be impacted by project construction (as identified in Table 3.3-7) is located within the Suisun Marsh PHRA. The commenter also requests that in the Geology and Soils section, the FEIR identify whether Impact 3.5-1: Substantial soil erosion or loss of topsoil could occur within and/or affect wetland or marsh habitat within the Suisun Marsh PHRA.*

As discussed above in response to comment L3-5, the proposed project will not result in adverse impacts to the opportunity to restore habitat in the Suisun Marsh PHRA. Impacts to wetlands and waters of the United States resulting from the proposed project will be minimal and will not occur to those communities targeted for restoration in the PHRA. Moreover, while a component of the Delta Plan, the rationale to make opportunities for restoration includes an assumption that baseline environmental conditions are degraded. Under CEQA, project impacts are measured against the baseline setting, which in this case is the actual physical conditions on the ground at the time of the Notice of Preparation or commencement of environmental review. (CEQA Guidelines, §§ 15125(a)(1), 15126.2(a).) The baseline does not include hypothetical situations, such as conditions that might occur under existing plans. (CEQA Guidelines, § 15125(a)(3).) As it stands, the project is not anticipated to have a significant adverse impact on wetlands, waters, and habitats beyond those already identified in the DEIR. Furthermore, impacts to these habitats would not occur within the Suisun March PHRA, as no project components are proposed in this area. No revisions to the analysis in the DEIR are necessary.

Table 3.3-7 of the DEIR describes a maximum of 0.03 acres of permanent impacts and 0.10 acres of temporary impacts on freshwater marsh/ephemeral drainages and wetlands, and none of these impacts are located within the PHRA. These impacts are a result of crossing and culverting an ephemeral drainage near the eastern portion of the project area in the Solano 4 West property. As discussed on page 27 of the *Preliminary Delineation of Waters of the United States, Including Wetlands: SMUD Solano 4 Wind Project* (in Appendix D of the DEIR), this ephemeral drainage neither flows into the Suisun Marsh nor is it hydrologically connected to the marsh; rather it flows east to the Sacramento River.



Source: SMUD 2019, DWR 2019

Figure 1. Suisun Marsh Protection Areas

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Implementation of best management practices and the avoidance and minimization measures described in the following mitigation measures from the DEIR will ensure that project construction would not result in indirect impacts on water quality of downstream drainages or wetlands, and that no substantial soil erosion or loss of topsoil habitat would occur.

- Mitigation Measure 3.3-12b: "Comply with Section 1600 streambed alteration agreement and CWA Sections 401 and 404 or the state's Porter-Cologne Act."
- Mitigation Measure 3.3-12c: "Develop a Reclamation and Revegetation Plan."
- Mitigation Measure 3.3-12d: "Conduct Worker Awareness Training"
- Measure 3.3-13a "Avoid and Minimize Impacts on Wetlands and Other Waters of the United States"
- Mitigation Measure 3.5-1, "Prepare and Implement a SWPPP and Associated BMPs,"
- Mitigation Measure 3.7-1b, "Establish and Implement an Environmental Training Program,"
- Mitigation Measure 3.7-1c, "Prepare and Implement a Hazardous Substance Control and Emergency Response Plan,"
- Mitigation Measure 3.7-1d, "Prepare and Implement a Spill Prevention, Control, and Countermeasures Plan."

L3-7 *Ecosystem Restoration Policy: Non-Native Invasive Species. The commenter cites Delta Plan Policy ER P5 (23 CCR section 5009) which requires consideration of impacts associated with introducing invasive non-native plants and cites the DEIR discussion of potential indirect impacts of the project on riparian habitat, noting that a similar assessment of indirect impacts should be applied to estuarine and marine wetlands, freshwater wetlands, tidal brackish wetlands, and tidal marsh upland. The commenter requests additional detail on how implementation of SMUD's land management plan and Mitigation Measure 3.3-12c would avoid introduction of invasive, nonnative species, or mitigate these potential impacts in a manner that appropriately protects the ecosystem. The commenter also requested a description of how SMUD's land management plan and Mitigation Measure 3.3-12c are consistent with Delta Plan Mitigation Measure 4-1, as described in the Delta Plan Mitigation Monitoring and Reporting Program (MMRP).*

DEIR Exhibit 3.3-1: *Project Site Land Cover* depicts all land cover types that occur within parcels owned by SMUD in the Solano 4 Wind project area and

includes areas and land cover types that will not be affected by project construction and operation. Direct and indirect impacts on estuarine and marine wetlands, tidal brackish wetlands, and tidal marsh upland were not explicitly discussed in the DEIR because, as described below, none will occur. Riparian habitat at the project site occurs close to proposed project construction activities, and project impacts on freshwater marsh/ephemeral drainages are described in the DEIR and are discussed above in the response to L3-6. All other sensitive habitat types present on the parcels owned by SMUD in the Solano 4 Wind project area occur far from proposed construction activities and the proposed footprint of project components.

Table 1 below summarizes the distance of the project footprint from estuarine and marine wetlands, tidal brackish wetlands, and tidal marsh upland for the 136M turbine option. No direct or indirect project impacts will occur on these sensitive habitat types because they are far from proposed construction activities, and because implementation of the mitigation measures described above in response to comments L3-5 and L3-6 will avoid and minimize potential indirect impacts. The same holds true for the 150M option.

The DEIR provides a thorough discussion and analysis of non-native invasive weeds at the project site (see DEIR pages 3.3-20-3.3-22) and includes mitigation to address the potential impacts associated with introduction and spread of non-native invasive weeds. Mitigation Measure 3.3-12c: “Develop a Reclamation and Revegetation Plan” provides performance standards and guidance on development of a plan that would avoid the introduction and spread of invasive weeds and prevent erosion. In addition, the plan will incorporate the goals and objectives of SMUD’s Land Management Plan for the Solano Wind Farm, which also provides detailed guidance for the management of invasive weeds. Implementation of this mitigation measure and of *SMUD’s Land Management Plan for the Solano Wind Farm* address the concerns expressed by the commenter regarding potential impacts of the project on sensitive habitat types from the introduction and spread of invasive weeds.

The DEIR mitigation measures described above in response to comments L3-5 and L3-6 are generally consistent with those described in the *Delta Plan MMRP.* However, SMUD’s Solano Wind project is not a covered activity under the Delta Plan, and therefore no detailed discussion of consistency with the Delta Plan MMRP is required.

Table 1. Distance of Project Impacts from Estuarine and Marine Wetlands, Tidal Marsh Uplands, Tidal/Brackish Marsh Wetlands for 136M Turbine Option

Wetland	Project Component	Disturbance Type	Distance (Feet)
Estuarine and Marine Wetlands	Access Roads	Permanent	1,191.38
	Local Roads	Permanent	824.71
	Turbines	Permanent	758.97
	Access Roads	Temporary	1,214.21
	Local Roads	Temporary	865.04
	Collection/Home Run Lines	Temporary	659.12
	Staging Areas	Temporary	5,436.14
Tidal Marsh Uplands	Access Roads	Permanent	576.82
	Local Roads	Permanent	630.57
	Turbines	Permanent	564.39
	Access Roads	Temporary	546.82
	Local Roads	Temporary	629.63
	Collection/Home Run Lines	Temporary	550.08
	Staging Areas	Temporary	5,436.81
Tidal/Brackish Wetlands	Access Roads	Permanent	1,263.74
	Local Roads	Permanent	5,751.86
	Turbines	Permanent	1,518.74
	Access Roads	Temporary	1,233.74
	Local Roads	Temporary	5,721.87
	Collection/Home Run Lines	Temporary	1,574.08
	Staging Areas	Temporary	6,469.48

L3-8 Closing Comments. The commenter invites SMUD to continue to engage with Council staff.

SMUD appreciates the input Council staff have provided on this project and the Council's offer for continued engagement on this project.

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Letter 4

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September 6, 2019

SMUD – Environmental Management
Attn: Ammon Rice
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Sacramento, CA 95852-1830

via email: ammon.rice@smud.org

Re: Solano 4 Wind Project Draft EIR

Dear Mr. Rice:

The County of Solano, through its Department of Resource Management, offers the following comments on the above-referenced Draft EIR (DEIR).

As an initial matter, we want to clarify that the Solano County Airport Land Use Commission (ALUC) is not a commission, agency, or part of County government. Although the County has a legal responsibility to provide staffing, quarters, and equipment necessary for the operations of the ALUC (see Pub. Res. Code, § 21671.5(c)), the ALUC operates as part of state government under the supervision of the California Department of Transportation, Division of Aeronautics. Therefore, the statements made on page 3.7-8 of the DEIR suggesting that the ALUC's Travis AFB Land Use Compatibility Plan (LUCP) are the legal equivalent of County zoning and building ordinances are incorrect. In addition, although the DEIR at pages 3.7-8 and 3.7-13 contends that SMUD may overrule an ALUC determination of inconsistency, the DEIR fails to explain how SMUD believes this can be accomplished. The DEIR fails to assess whether the evidence relied upon to prepare the DEIR would be sufficient to support those specific finding. Even if it were determined that SMUD has the ability to overrule the ALUC if specific factual findings are made it would not excuse SMUD from submitting the project to the ALUC for a consistency determination in conformance with the ALUC's procedural requirements. For that reason, the list of responsible and trustee agencies in section 2.9.2 and table 2-4 of the DEIR should be corrected to identify the ALUC's role with respect to this project.

4-1

4-2

4-3

At page 3.9-2, the DEIR states that SMUD's wind turbine facilities are exempt from County zoning and building ordinances pursuant to sections 53090 – 53097.5 of the Government Code. However, Chapter 2 of the DEIR describes the project as consisting of new turbines, new homerun lines, and various other components. The recent Court of Appeal decision in *City of Hesperia v. Lake Arrowhead Community Services District,* 37 Cal.App.5th 734 (July 19, 2019), holds that lines connecting a generating facility to the grid are "transmission lines" for purposes of Government Code section 53091(e). It is unclear from the DEIR whether the homerun lines qualify as transmission lines under the *City of Hesperia* decision, and whether the new homerun lines will be installed inside or outside of existing rights of way. The Solano County Zoning Ordinance requires approval of a discretionary use permit for installation of utility lines outside of an existing right of way. In addition, section 12808.5 of the Public Utilities Code requires a municipal utility district to follow a specified process when locating or constructing transmission or distribution lines; the DEIR does not discuss this required process. Due to the incomplete information provided in the DEIR, the County is not able to assess whether it has land use jurisdiction over any elements of the project.

4-4

4-5

In section 3.11, the DEIR discusses the project's potential impacts on County roads, concludes these impacts are potentially significant, and recommends two mitigation measures to reduce these impacts to a less-than-significant level. However, Mitigation Measure 3.11-2 merely requires SMUD to make a good faith effort to enter into a mitigate agreement for the project's impacts to various County roads. A good faith effort at mitigation, while commendable, is not alone sufficient to achieve mitigation. This recommended mitigation measure should be revised to require execution of a mitigation agreement prior to the start of construction. 4-6

As a general matter, Solano County is quite concerned with impacts that the proposed taller wind turbines will have on the Travis Air Force Base radar system. Taller turbines will exacerbate already identified impacts to the Travis System. The County's General Plan identifies the importance of Travis Air Force Base not only to the County but to the region as a whole. It is high recommended that this project be reconsidered until such time as impacts to Travis Air Force Base are fully addressed. 4-7

Sincerely,

Bill Emlen, Director
Department of Resource Management

Letter 4-1 Response	Bill Emlen, Director Solano County Department of Resource Management October 11, 2019

L4-1 Clarification that Solano County Airport Land Use Commission is not a Part of County Government. The commenter clarifies that the Solano County Airport Land Use Commission (ALUC) is not a part of County government. Although the County must provide staffing, quarters, and equipment to support ALUC operations, the ALUC operates as part of state government and is supervised by the California Department of Transportation, Division of Aeronautics. The commenter notes that statements made on page 3.7-8 of the DEIR suggesting that ALUC's Travis Air Force Base Land Use Compatibility Plan (LUCP) is the legal equivalent of a County zoning and building ordinance are incorrect.

Please refer to Downey Brand's letter dated April 26, 2019 in response to the Solano County ALUC comments on SMUD's Notice of Preparation for Solano 4 Wind Project (NOP) in Appendix C of this Final EIR (FEIR) for additional information regarding SMUD's position on this issue.

The ALUC's exercise of authority in drafting the LUCP is an exercise of the same zoning authority conferred by the Legislature upon cities and counties. Cities and counties draw their zoning authority from the state's general police powers. (See Cal. Const. art. XI, § 7 ["A county or city may make and enforce within its limits all local, police, sanitary, and other ordinances and regulations not in conflict with general laws"].) The Attorney General has made clear that the ALUC exercises its authority specifically by using zoning power, which derives from the general police powers possessed by cities and counties. (See 63 Ca1.Atty.Gen.Ops. 641, at pp. 3-4 (1980) ["Attorney General Opinion No. 80-416"].) "Even though generally thought of in terms of city or county regulation, zoning is one exercise of the state's police power, and there is no impediment to the legislature granting that power to other agencies in the statewide interests." (*Id.* at p. 4.) This is precisely what the legislature has done in this case in creating the ALUC under the SAA.

The ALUC was established by Solano County on December 7, 1971 by Ordinance 781 to provide for orderly development of public airports in Solano County, as well as area surrounding airports to prevent new noise and safety problems.[1] The ordinance creating the ALUC and the powers delegated to the ALUC are derived from Solano County's inherent police powers.[2] The ALUC is listed on the County's website as a county special district, and is comprised in

[1] https://www.solanocounty.com/depts/rm/boardscommissions/solano_county_airport_land_use_commission/default.asp

[2] Even the SAA recognizes the police powers of a county and require counties to establish an ALUC for orderly development of the public airports in a county and the areas around the airports. (Pub. Util. Code, § 21670(b).)

part by members appointed by the Solano County Board of Supervisors.[3] The ALUC and County share office space and staff (e.g., Director of Resource Management), and the County and ALUC are represented by the same County Counsel's office. Thus, while it may have some independence, the ALUC's powers in drafting and approving the LUCP are an extension of Solano County's police powers, and not separate powers of a wholly independent state agency.

Regardless of the specific legal structure of the ALUC, the DEIR evaluates aeronautical safety and noise issues, and concluded based on substantial evidence that this project, which replaces existing wind turbines, will not result in significant adverse impacts in these areas.

L4-2 SMUD's Ability to Overrule an ALUC Determination of Inconsistency. The commenter notes that on pages 3.7-8 and 3.7-13, the DEIR states that SMUD may overrule an ALUC determination of inconsistency but does not explain how.

While SMUD believes that the ALUC consistency determination process does not apply to this project, as noted in response to comment L4-3 below, SMUD submitted an LUCP consistency determination application to Solano County ALUC for an advisory ruling. On May 20, 2021, the ALUC determined that the project was inconsistent with the LUCP. In accordance to the State Aeronautics Act (SAA) provisions, the SMUD Board of Directors is now proposing, after a noticed public hearing and consistent with evidence in the record before it, to overrule the ALUC determination after making the requisite findings under the SAA. SMUD's proposed decision and findings were circulated to the ALUC and the California Department of Transportation's Division of Aeronautics on July 2, 2021, i.e., at least 45 days prior to its decision to overrule the ALUC.

Please also refer to Downey Brand's letter dated April 26, 2019 in response to the Solano County ALUC comments on SMUD's NOP in Appendix C of this FEIR for additional information regarding SMUD's position on this issue.

L4-3 Need for Clarification of ALUC's Role with Respect to the Project. The commenter states that even if SMUD has the authority to overrule the ALUC if specific factual findings are made, it would not excuse SMUD from submitting the project to the ALUC for a consistency determination. Accordingly, the commenter states that the list of responsible and trustee agencies in section 2.9.2 and table 2-4 of the DEIR should be corrected to identify the ALUC's role with respect to the project.

[3] See footnote 1.

Please refer to the Master Response. The ALUC has been added to Table 2-4 of the DEIR as follows:

State		
Agency	**Type of Permit**	**Purpose**
State Water Resources Control Board	Clean Water Act Section 402, construction stormwater permit	Prevent discharge of construction-related pollutants to waters of the United States.
San Francisco Bay Regional Water Quality Control Board	Clean Water Act Section 401, water quality certification	Prevent the discharge of construction-related pollutants to waters of the United States.
California Department of Fish and Wildlife	Streambed alteration agreement	Allow the project to alter a bank or streambed located in California.
California Department of Transportation	Haul truck and overload permit	Permit oversize trucks to travel on local roadways.
Solano County ALUC	ALUC consistency determination review is not required, but is advisory to SMUD	The consistency determination process is advisory only. On May 20, 2021, the ALUC determined that the project is inconsistent with the Travis Air Force Base Land Use Compatibility Plan (LUCP). SMUD Board of Directors is proposing to overrule the ALUC determination after a noticed public hearing, with the required number of votes of its Board members and after making the requisite findings under the State Aeronautics Act (SAA). The proposed decision and findings were circulated to the ALUC and the California Department of Transportation, Division of Aeronautics on July 2, 2021 as per the SAA process requirements.

L4-4 Need for Determination of Whether Home Run Lines Qualify as Transmission Lines and Will be Installed Outside of Existing Rights-of-Way; Possible Need for a Discretionary Use Permit. The commenter notes that on page 3.9-2, the DEIR states that SMUD's wind turbines are exempt from County zoning and building ordinances pursuant to sections 53090 - 53097.5 of the Government Code. The commenter also notes that Chapter 2 of the DEIR describes the project as consisting of new turbines, new home run lines, and various other components. A

Services District, 37 Cal.App.5th 734 [July 19, 2019]) held that that lines connecting a generating facility to the grid are "transmission lines" for purposes of Government Code section 53091 (e). The commenter states that the DEIR is unclear as to whether the planned home run lines qualify as transmission lines as per the recent court decision, and whether they will be installed inside or outside of existing rights-of-way. The commenter points out that a Solano County Zoning Ordinance requires the approval of a discretionary use permit for the installation of utility lines outside of an existing right-of-way.

Government Code 53091 (e) states: "Zoning ordinances of a county or city shall not apply to the location or construction of facilities for the production, generation, storage, treatment, or transmission of water, or for the production or generation of electrical energy, facilities that are subject to Section 12808.5 of the Public Utilities Code, or electrical substations in an electrical transmission system that receives electricity at less than 100,000 volts. Zoning ordinances of a county or city shall apply to the location or construction of facilities for the storage or transmission of electrical energy by a local agency, if the zoning ordinances make provision for those facilities." Storage and transmission facilities will not be located or constructed as part of the project. As described in Section 2.5.6 *Power Collection System* of the DEIR, the Solano 4 Wind Project's power collection system would include the wind turbine generator (WTG) interties, underground cable, a step-up transformer, and associated protective switching. The power, which would leave each WTG transformer, would be interconnected with adjacent WTGs. These joined circuits would convey 34,500-volt power to the Russell Substation via new underground electrical cable in a trench within the "home run" alignment (DEIR Exhibit 2-7) and would require new easements. WTGs will be electrically combined into 4-6 generation feeder circuits (underground electrical cables) on a dedicated 34.5 kilovolt medium voltage collection system. No other utility loads, end-use customers, or other uses—outside of the WTG system—will be fed by these new generation collection system feeders. Additionally, the Solano 4 Wind Project generation feeder circuits will not be under the control of PG&E.

As part of the Solano 4 Wind Project, only underground 34.5 kilovolt, medium voltage, generator collection system feeders will be constructed. Per thePG&E[4] glossary of terms, as well as the transmission system definitions provided by the California Public Utilities Commission (CPUC),[5] these generation feeders circuits do not constitute electrical transmission facilities.

The *Hesperia* decision should not be read to render the exemption in Government Code 53091(e) inapplicable to the project. Public Utilities Code Section 12808.5 is referenced in Government Code Section 53091(f), and it

[4] *Pacific Gas and Electric Glossary of Terms:* https://www.pge.com/includes/docs/pdfs/shared/customerservice/nonpgeutility/electrictransmission/handbook/glossary.pdf
See Cal.P.U.C. General Order No. 131-D, § 1: https://docs.cpuc.ca.gov/PUBLISHED/Graphics/589.PDF

was adopted in parallel with the related amendments to Government Code Section 53091—see California Statutes 1977, Chapters 324 and 436. In fact, the two sections were adopted by numerically sequential Assembly Bills, 242 and 243 (1977). Both statutes use the term "transmission," and Government Code Section 53091 uses it distinctly from "distribution," seeming to evince a clear intent on the part of the Legislature to distinguish between the electrical industry term "transmission" and other electrical industry terms such as "distribution," and thus to give a meaning to the term transmission that is not broadly encompassing of all movement of energy through any kind of conduit. The court hearing the appeal in the *Hesperia* case appears to have lacked that background and did not consider the legislative history of parallel amendments of Public Utilities Code Section 12808.5 and to Government Code Section 53091 in reaching its decision. The collection and home run lines are not intended to transmit energy from the project; they are intended to collect it to the project substation. Reading *Hesperia* to mean that the exemption does not apply to the project would render the exemption meaningless. Thus, the holding of *Hesperia* case is inapplicable here.

That said, if necessary, the SMUD Board of Directors has the authority to make transmission ordinances inapplicable to the project pursuant to qualified exemption under Government Code Section 53096 based on compliance with notice and hearing proceedings and finding there is no feasible alternative to the installation if there is no feasible alternative to the proposal.

As outlined in the *Hesperia* case, the finding of "no feasible alternative" implies that there is no alternative location for successfully accomplishing the project "'within a reasonable period of time, taking into account economic, environmental, social, and technological factors.'" (*City of Hesperia v. Lake Arrowhead Community Services Dist.* (2019) 37 Cal.App.5th 734, 762, quoting Government Code Section 53096(c).) The *Hesperia* court found further guidance for "feasibility" in application of the identical definition under the California Environmental Quality Act (CEQA). (*Id.*; see also CEQA Guidelines, § 15364; Pub. Resources Code, § 21061.1 [defining feasibility as "capable of being accomplished in a successful manner within a reasonable period of time taking into account economic, environmental, legal, social and technological factors."].) The question of feasibility is not simply whether an alternative or mitigation measure is literally possible, but whether it is reasonable and practical in light of these and other factors. (*No Slo Transit, Inc. v. City of Long Beach* (1987) 197 Cal.App.3d 241, 256 [mitigation is infeasible if it is impractical].) Alternatives can also be rejected as infeasible if they conflict with certain overarching policies (e.g., a conflict with State's Global Warming Solutions Act of 2006, or AB 32). A project alternative can be eliminated from consideration based on any one factor. Consequently, if an alternative is infeasible for noneconomic reasons, it can be rejected on that basis alone without having to evaluate other factors (including economics).

As discussed under Responses L2-23 and L2-27, the project consists of repowering wind turbines in a specified Wind Resource Area. With very few high-quality wind sites left in Northern California (or in the SMUD service and production territories), alternative sites are impractical and cost prohibitive. Moreover, regulatory restrictions and unavailability of land similarly hamper offsite alternatives. SMUD's Integrated Resource Plan (IRP) process guides decisions on future resource developments based on the need for new renewable and carbon-free resources to meet California's mandate on renewable procurement (2030, 60%) and to meet the directed energy production goals of SMUD's Board of Directors. SMUD's IRP, adopted by the Board of Directors in 2018, laid out a pathway to achieve a Net Zero greenhouse gas (GHG) emissions goal by 2040 through investment in electrification while significantly expanding renewable and carbon-free resources in SMUD's energy portfolio. In July 2020, the Board declared a climate emergency and adopted a resolution calling for SMUD to take significant and consequential actions to eliminate SMUD's greenhouse gas emissions by 2030 and directed staff to develop a plan to achieve this goal. The 2030 Zero Carbon Plan (2030 Plan) has been presented to the Board and calls for the addition of up to 2,300 MW of new renewables and 1,100 MW of batteries by 2030 – more than double the amount planned for in the 2018 IRP. The 2030 Plan calls for maximizing new cost-effective utility-scale renewables within SMUD's service territory (up to 1,500 MW utility solar), but also requires additional resources not available locally, such as wind and geothermal.

Resource diversity is coveted in resource planning and necessary for reliable operations, as it results in varying generation profiles, costs, and avoids over investing in one generation type that may result in diminishing returns. Wind generation, such as generation our proposed Solano 4 wind resource, is beneficial from a resource diversity perspective as it can provide more output during peak hours than solar generation, and typically becomes available as solar goes offline. In short, wind is an effective renewable complement to solar, and is a proven technology that can be planed for and pursued today.

Adding cost-effective renewable resources that complement the solar generation profile, are located relatively close to SMUD, and help ensure reliability will be imperative to achieving the goals of the 2030 Plan. Identifying and building enough resources in the next nine years will be a challenge, and Solano 4 Wind, as a known project on the only remaining land within the Wind Resource Area not already currently used for wind generation (or as to a portion of the project area, on land already dedicated to existing generation), and with existing infrastructure will go a long way to help meet the very aggressive GHG reduction goal. Thus, SMUD will have a factual basis for making the requisite Section 53096 feasibility findings.

Please also refer to the Master Response for SMUD's position as a lead agency for an energy generating project.

L4-5 Required Process When Locating or Constructing Transmission or Distribution Lines. The commenter notes that section 12808.5 of the Public Utilities Code requires a municipal utility district to follow a specified process when locating or constructing transmission or distribution lines. The commenter states that the DEIR does not discuss this required process. As a result, the commenter states that the County is not able to assess whether it has land use jurisdiction over any elements of the project.

Section 12808.5 of the Public Utilities Code requires a municipal utility district to follow a specified process when locating or constructing transmission or distribution lines. As discussed above in Response L4-4, the collection lines and home run lines for Solano 4 are not transmission lines. Further, Section 12808.5 of the Public Utilities Code states that it does not apply to distribution lines conveying less than 100,000 volts. (Pub. Util. Code, § 12808.5(e)(2).) The collection lines and home run lines that will be sited and constructed as part of the project would convey only 34,500-volt power to the Russell Substation. Thus, even if the collection and home run lines could be characterized as distribution lines, the lines sited and constructed as part of the project are explicitly exempted from Section 12808.5 of the Public Utilities Code.

As stated in Response L4-4 above, the project will be comprised solely of underground 34.5 kilovolt, medium voltage, generator collection system feeders, which does not constitute electrical transmission facilities and absolute exemption under section 53091(e) is still applicable. Thus, holding of *Hesperia* case is inapplicable here. Master Response Land Use further discusses why local zoning ordinances do not apply to the project. That said, if necessary, the SMUD Board of Directors has the authority to adopt a qualified exemption under Government Code Section 53096 based on compliance with notice and hearing proceedings and finding there is no feasible alternative to the proposal.

L4-6 Mitigation Measure Should Require a Mitigation Agreement. The commenter notes that the DEIR discusses the project's potential impacts on County roads in section 3.11. The commenter states that Mitigation Measure 3.11-2, requiring SMUD to make a good faith effort to enter into a mitigation agreement regarding the project's impacts to County roads, is not sufficient to achieve mitigation. Instead, the commenter requests that the recommended mitigation measure be revised to require the execution of a mitigation agreement before construction begins on the project.

Mitigation Measure 3.11-2 states that specific County roads affected by the project shall be returned to preconstruction conditions after construction. To avoid giving the impression that the mitigation is conditional, the words "good-faith effort" was deleted from Mitigation Measure 3.11-2. The revision to Mitigation Measure 3.11-2 is included in this FEIR. Please refer to section 3.4 Corrections and Revisions to the DEIR, and to the MMRP in Chapter 4.

L4-7 Impacts of Taller Turbines on Travis Air Force Base Operations. The commenter states that Solano County is very concerned about impacts of taller wind turbines on the Travis Air Force Base (AFB) radar system and believes that they will exacerbate already identified impacts. The commenter notes that the County's General Plan identifies the importance of Travis AFB, not only to the County, but also to the region as a whole. The commenter recommends that that project not proceed until potential impacts to Travis AFB are fully addressed.

Please refer to Master Response 2. SMUD has been actively engaged in addressing these issues with Travis AFB since inception of the project. Travis AFB submitted its Solano 4 Wind Project Operational Risk Assessment to the Department of Defense (DOD) on January 11, 2021. SMUD received the requested extensions for the nineteen (19) Determinations of No Hazard (DNH) for the project on January 28, 2021, and a letter dated February 9, 2021 from Steven J. Sample, Executive Director, Military Aviation and Installation, Assurance Siting Clearinghouse stating that as a result of discussions between SMUD and the U.S. Air Force, the construction of the project, submitted to the FAA on April, 17, 2020, will not present an adverse impact to military operations (See FAA Determinations in Appendix B). Based on substantial evidence, including the evaluation and analysis of its own aeronautics' experts, SMUD has determined that there will be no significant safety or other impacts to Travis AFB arising from this project.

Letter 5

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September 6, 2019

Via Email and Federal Express

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Re: Draft Environmental Impact Report for the Solano 4 Wind Project

Dear Mr. Rice:

On behalf of the Solano County Airport Land Use Commission ("ALUC"), we submit the following comments on the Sacramento Municipal Utility District's ("SMUD's) Draft Environmental Impact Report ("DEIR") for the Solano 4 Wind Project ("Project"). This letter follows up on, and incorporates herein by reference, our February 8, 2019 letter regarding SMUD's January 9, 2019 Notice of Preparation of an Environmental Impact Report ("NOP").

As set forth below, the DEIR fails to comply with numerous provisions of the California Environmental Quality Act ("CEQA"), Pub. Res. Code § 21000 et seq., and the regulations implementing CEQA, California Code of Regulations, Title 14, § 15000 et seq. ("CEQA Guidelines"). Specifically, the DEIR violates CEQA in that it does not: (1) adequately describe the Project or its environmental and regulatory setting; (2) adequately analyze the Project's relationship to the Travis Air Force Base Land Use Compatibility Plan ("LUCP"); (3) adequately analyze the Project's significant impacts; (4) adequately analyze the Project's cumulative impacts; (5) provide for adequate mitigation of the Project's significant impacts; and (6) evaluate a reasonable range of alternatives. SMUD must therefore revise and recirculate the DEIR in order to permit an adequate understanding of the issues at stake. 5-1

California's airport land use commissions are part of the broader framework of efforts around the country aimed at effectively ensuring compatible land

use in the vicinity of airports. ALUC looks forward to working with SMUD to ensure the Project's safety and land use compatibility with respect to airports within ALUC's coverage area. In order to fulfill this critical mission, ALUC must follow the review provisions set forth in the State Aeronautics Act, Public Utilities Code §§ 21001 et sq. ("Act") and the LUCP. Thus, ALUC reiterates its position stated in our prior letter on the NOP: ALUC strenuously disagrees with SMUD's assertion that it is not required to obtain a consistency determination from ALUC for Project approval. This assertion runs directly counter to the express terms of the State Aeronautics Act. ALUC intends to vigorously enforce the provisions of the Act and the LUCP requiring that SMUD must seek such a consistency determination for the Project from ALUC.

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We submit with this letter a review of the DEIR by Dr. Jerry Johnson, Director of Engineering, Regulus-Group, LLC, Washington, DC. Dr. Johnson has extensive recognized experience and expertise in National Airspace System surveillance and navigation systems, including in assessing interference impacts from wind turbines on radar at airport facilities. Dr. Johnson's memorandum, along with his qualifications, are attached hereto as Exhibit 1 and incorporated in full by reference.

I. The DEIR Does Not Adequately Describe the Project or the Environmental Setting.

The environmental impact report is "the heart of CEQA." *Laurel Heights Improvement Assn. v. Regents of Univ. of Cal.* (1988) 47 Cal.3d 376, 392 (citations omitted) (*Laurel Heights*). It "is an environmental 'alarm bell' whose purpose it is to alert the public and its responsible officials to environmental changes before they have reached ecological points of no return. The EIR is also intended 'to demonstrate to an apprehensive citizenry that the agency has, in fact, analyzed and considered the ecological implications of its action.' Because the EIR must be certified or rejected by public officials, it is a document of accountability." *Id.* (citations omitted). Where, as here, an EIR fails to fully and accurately inform decision makers, and the public, of the environmental consequences of proposed actions, it does not satisfy the basic goals of the statute. *See* Pub. Res. Code § 21061 ("The purpose of an environmental impact report is to provide public agencies and the public in general with detailed information about the effect that a proposed project is likely to have on the environment; to list ways in which the significant effects of such a project might be minimized; and to indicate alternatives to such a project.").

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An "accurate, stable and finite project description is the *sine qua non* of an informative and legally sufficient EIR." *San Joaquin Raptor/Wildlife Rescue Center v. County of Stanislaus* (1994) 27 Cal.App.4th 713, 730, quoting *County of Inyo v. City of*

L.A. (1977) 71 Cal.App.3d 185, 193. Such a description is "necessary for an intelligent evaluation of the potential environmental effects of a proposed activity." *Id.*, quoting *McQueen v. Board of Directors* (1988) 202 Cal.App.3d 1136, 1143. An inaccurate or incomplete project description may infect every subsequent section of the EIR and render the analysis of significant environmental impacts as well as feasible mitigation measures and alternatives inherently unreliable. Project descriptions that are internally inconsistent or incomplete are inadequate as a matter of law. *Communities for a Better Environment v. City of Richmond* (2010) 184 Cal.App.4th 70, 83, 89 (holding that an EIR was inadequate because its project description was "inconsistent and obscure" as to the extent of project activities).

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Further, CEQA and the CEQA Guidelines mandate that an EIR include a description of "the physical environmental conditions in the vicinity of the project . . . from both a local and a regional perspective . . . Knowledge of the regional setting is critical to the assessment of environmental impacts." CEQA Guidelines § 15125(a) and (c). This requirement derives from the principle that without an adequate description of the project's local and regional context, the EIR—and thus the decision-makers and the public who rely on the EIR—cannot accurately assess the potentially significant impacts of the proposed Project.

According to the DEIR, the Project would involve construction of up to 22 massive new wind turbine generators ("WTGs")—up to 10 in Solano 4 East and up to 12 in Solano 4 West—as well as related transmission facilities. At up to 591 feet tall, the WTGs would be over 40 percent higher than any existing turbines in the area. Indeed they would be amongst the tallest anywhere in the Country. *See* FAA Digital Obstacle File website [at https://www.faa.gov/air_traffic/flight_info/aeronav/digital_products/dof/]. The turbines would also have a maximum diameter of up to 492 feet. DEIR at 2-10.

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The DEIR acknowledges that WTGs increase risks of aircraft collisions and radar signal interference (DEIR at 3.7-21), and further acknowledges that the Project is within the line of sight of 4 different radar facilities, including Travis Air Force Base ("Travis") (DEIR at 3.7-14). *See also* State of California, Department of Transportation, Division of Aeronautics, California Airport Land Use Planning Handbook (Oct. 2011) [https://dot.ca.gov/programs/ aeronautics/airport-land-use-planning] ("Handbook") at 4-39 ("[W]ind-turbine farms have been known to interfere with air traffic control (ATC) or military air defense radar."). Thus, California policy counsels that "Airport land use compatibility should be one of the factors considered in the appropriate placement of these facilities." Handbook at 4-40.

Despite these acknowledged and obvious risks, the DEIR fails to provide relevant information about the Project and the environmental and regulatory setting so that a reader could assess such compatibility. The Project description is inaccurate, incomplete, inconsistent, and/or misleading in four ways. First, the DEIR states the model and final location of the WTGs will not be selected until a later date. DEIR at 2-10. However, to determine a turbine project's individual and cumulative impacts on radar, precise information such as location, height, blade size, and reflectivity need to be known. Also, the position of the turbines relative to one another is critical to assessing impacts.

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Second, the DEIR states that "The FAA conducted an aeronautical study of the proposed project . . . ." DEIR at 3.7-8. Likewise, the DEIR says that "The FAA has conducted an independent evaluation of the Solano 4 Wind Project . . ." DEIR at p. 3.7-22. Those DEIR statements are misleading. The Project Description says it involves "22 new WTGs" while instead FAA reviewed only 19 proposed turbines. The DEIR's project description is unstable, inaccurate, and incomplete as it (1) is inconsistent as to whether the 19 turbines will comport with the specifications examined in the FAA determinations or are yet to be determined as elsewhere stated in the DEIR, and (2) gives no information whatever about the additional 3 turbines.

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Moreover, the DEIR is incomplete because it attached (as Appendix F) only *one* of the FAA's determinations, which applies directly to only *one* proposed structure that was proposed to be located precisely at Latitude 38-07-54.16N NAD 83 and Longitude 121-46-31.47W. The FAA determination itself says that "This determination is based, in part, on the foregoing description which includes specific coordinates and heights. This determination is valid for coordinates within one (1) second latitude/longitude and up to the approved AMSL height listed above." Since the DEIR purports to rely entirely on the FAA determinations in its analysis of the Project's 22 proposed WTGs, the DEIR is inadequate as an informational document for failure to include FAA determinations concerning any turbines beyond that single turbine at that one specified location.

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Third, the DEIR's failure to precisely identify which WTGs will be constructed and where is further reflected in the DEIR's shifting Project objective for megawatt (MW) output, which in turn impacts the DEIR's analysis of alternatives. On August 22, 2019, SMUD altered the Executive Summary to the previously circulated DEIR by, among other things, changing the project objective from producing 92 MW to producing 91 MW. (SMUD sent out notices of that change by ordinary mail, without changing the September 6 date for comments.) Meanwhile the DEIR's identification of the environmentally superior alternative is based on 92 MW. DEIR at 6-12. Further, the

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DEIR excludes alternatives from detailed consideration on the basis of not meeting project objectives. The DEIR's statement of objectives is not stable and consistent, and the reviewing public cannot tell from the DEIR if there may be an appropriate alternative that would meet the 91 MW objective but was excluded from consideration on the basis of the statement that the objective was 92 MW. The DEIR must be corrected and recirculated with a proper alternatives analysis due to the shifting nature of the project objectives. Moreover, as discussed further below, this discrepancy is a further indication that the DEIR has defined its project objectives narrowly to preclude consideration of reasonable alternatives, conforming the statement of objectives around the proposed Project's details, rather than properly examining alternatives in light of the Project's bona fide objectives.

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Fourth, the Project description is unstable and/or the cumulative impacts analysis is improper because the DEIR hints that later actions may be incorporated into the overall project, but does not specify if those actions would or should be included within this Project. DEIR at 2-26. On the one hand, the DEIR talks about "SMUD's overall Solano Wind Project" as if SMUD views it as one thing. DEIR at 2-5. "With a total of 107 WTGs ranging in size from 660 kilowatts (kW) to 3.0 MW, the overall Solano Wind Project currently has a total site rated capacity of 230 MW." DEIR at 2-6. And the DEIR also states that "SMUD is committed to long-term generation of renewable energy in the WRA. At the end of this project's operational life, SMUD would likely repower the Solano 4 Wind Project using current industry technology, or would remove the turbines and restore the project to conform with the surrounding land use." DEIR at 2-6. CEQA requires that an EIR "include an analysis of the environmental effects of future expansion or other action if: (1) it is a reasonably foreseeable consequence of the initial project; and (2) the future expansion or action will be significant in that it will likely change the scope or nature of the initial project or its environmental effects." *Laurel Heights Improvement Assn. v. Regents of University of California* (1988) 47 Cal.3d 376, 398.

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As is common knowledge, and as is patently demonstrated by this phase 4 of the Solano Wind Project, the trend over time in commercial-scale turbine technology is toward larger and larger turbines. The DEIR in effect appears to take the position that it is reasonably foreseeable as part of "SMUD's overall Solano Wind Project" that SMUD will demolish these Phase 4 turbines and install even taller turbines. Yet there is no analysis of any impact of those even bigger turbines, nor even any description of them. For example, how tall will they be? Based on SMUD's saying in the DEIR that "SMUD is committed to long-term generation of renewable energy in the WRA," this defect in the DEIR extends not only to the DEIR's failure to describe and analyze future turbines to replace

Phase 4, but also with respect to the 107 turbines in Phase 1 through 3. DEIR at 2-5. The DEIR says that the maximum height of turbines in those three phases is 410 feet. DEIR at p. 2-5. The Phase 4 proposal is for turbines of 591 feet. DEIR at 2-10. If Phases 1 through 3 were replaced with turbines of Phase 4's proposed height that would be 107 more turbines of 591 feet, each at least 181 feet taller than what exists presently. The DEIR gives no indication of the impacts of that. If, as the DEIR says, those would instead be replaced in the future "using current industry technology" (i.e., the largest conceivable turbine technology then available on the market at that unspecified future time), the DEIR is further defective for failing to describe that aspect of the "overall Solano Wind Project," identify its impacts, and analyze those impacts. Whether viewed as a defect in the DEIR's project description or cumulative impacts analysis, either way the DEIR needs to be recirculated to provide an opportunity for public comment on these issues.

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The DEIR likewise fails to disclose necessary information about the environmental setting, including what type of radar equipment is currently being used at the four airport facilities in the Project vicinity, and for what purpose, as well as the relevant attributes of that equipment. It also fails to reveal the number and types of aircraft that fly in the affected airspace, as well as where and when they fly, and for what purpose. Without providing such pertinent information, it is impossible to assess the Project's impacts upon any of those facilities, any plans that area airports may have for orderly expansion consistent with the State Aeronautics Act, and the need to protect people on the ground from the added risks that come with projects of this type, not to mention air safety and the LUCP. As discussed in detail below, the DEIR also fails to accurately describe the regulatory setting, including the role of the State Aeronautics Act, ALUC, and the LUCP. The DEIR is therefore inadequate and must be corrected and recirculated with adequate Project description and setting information.

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II. The DEIR Does Not Properly Analyze the Project's Relationship to the Travis Air Force Base LUCP.

As the DEIR recognizes, CEQA requires that environmental impact reports analyze the consistency of a project with applicable local plans. *See Napa Citizens for Honest Govt. v. Napa County Bd. of Supervisors* (2001) 91 Cal.App.4th 342, 386-87; CEQA Guidelines Appendix G, § XI(b); *see also* DEIR at 3.9-4 (adopting Appendix G threshold of significance). Inconsistencies with a general plan or other local plan goals and policies that were enacted in order to protect the environment are significant impacts in and of themselves and can also be evidence of other significant impacts. *See id.*; *Pocket Protectors v. City of Sacramento* (2004) 124 Cal.App.4th 903, 929.

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As stated in our comments on the NOP, the Solano County ALUC exists to protect public health, safety, and welfare by ensuring compatible land uses within the vicinity of the County's airports. Pub. Util. Code § 21670. To that end, the State Legislature has empowered ALUC to develop land use compatibility criteria and to ensure that local agency actions conform to those criteria. Pub. Util. Code §§ 21674 – 21676.5. "In formulating an airport land use compatibility plan, the commission may develop height restrictions on buildings, specify use of land, and determine building standards, including soundproofing adjacent to airports, within the airport influence area." Pub. Util. Code, § 21675(a).

In 2015, ALUC adopted the current iteration of the Travis LUCP to define land use compatibility criteria within the Base's airport influence area ("AIA"). Thus, the DEIR must fully analyze the Project's relationship to the LUCP and identify any feasible mitigation measures to lessen or avoid any inconsistencies. Here, the DEIR's analysis of the Project's consistency with the LUCP is fundamentally flawed.

Because wind turbines—especially those of the Project's size—can generate air traffic control radar interference, rotor turbulence, and vertical obstruction hazards, section 5.6.1 of the Travis LUCP requires that all new and replacement turbines in the County *that are greater than 100 feet in height* AGL "shall be referred to the ALUC for a consistency determination." Travis Air Force Base LUCP, § 5.6.1. The proposed Project's turbines would be up to 591 feet. As the DEIR recognizes, the Project site is in Zone 4 of the LUCP. DEIR at 3.9-6. The DEIR, however, dismisses potential plan inconsistencies and impacts based on three erroneous assumptions. DEIR at 3.9-6, 3.7-11. Because, as set forth below, each of the DEIR's assumptions are wrong as a matter of law, the DEIR's ultimate conclusion that the Project would have no significant land use impacts and thus "[n]o mitigation measures are required" (DEIR at 3.9-7) is unsupportable. The DEIR must be revised and recirculated to address this error.

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A. Neither the FAA's Regulations Nor Its Determination of No Hazard Finding Preempt ALUC's Travis Air Force Base LUCP.

First, the DEIR asserts that there is no potential issue to address with respect to the LUCP because "the FAA has issued a Determination of No Hazard Finding for the Solano 4 Wind Project, and FAA and its regulations concerning air safety and aviation navigation preempt the ALUC's land use regulations regarding radar system interference." DEIR at 3.9-6; *see also* DEIR at 3.7-22 (similarly claiming preemption regarding air safety impacts). The DEIR cites no express preemption provision (nor could it) and thus apparently relies on implied preemption (either "conflict" or "field" preemption). However, there is no such implied preemption. Rather, the overwhelming

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federal and state authorities demonstrate that the FAA does not have authority over local land use decisions, including those aimed to ensure compatibility with airports, and that such decisions are left in the hands of local authorities such as ALUC.

Notably, the FAA itself espouses this view in general as well as in this particular case. As the FAA's Order that sets forth that agency's "Procedures for Handling Airspace Matters" explains:

> The FAA's authority to promote the safe and efficient use of the navigable airspace, whether concerning existing or proposed structures, is predominantly derived from Title 49 U.S.C. Section 44718 (Section 44718). It should be noted however, that *Section 44718 does not provide specific authority for the FAA to regulate or control how land (real property) may be used in regard to structures that may penetrate navigable airspace.*

FAA Order JO 7400.2M (February 28, 2019) § 5-1-2a (emphases added); *see also* Handbook at 3-28 (stating same).

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Thus, "[o]nce issued, a hazard/no-hazard determination has no enforceable legal effect. The FAA is not empowered to prohibit or limit proposed construction it deems dangerous to air navigation." *Aircraft Owners & Pilots Ass'n v. FAA* (D.C. Cir. 1979) 600 F.2d 965, 966 n. 2; *see also* Handbook at 5-11. Such land use authority is left in the hands of local governments. *See Gustafson v. City of Lake Angelus* (6th Cir. 1996) 76 F.3d 778, 784 ("The FAA has acknowledged that land use matters within the federal aviation framework are intrinsically local."); Handbook at 3-11 ("The FAA has no authority over off-airport land uses—its role is with regard to the safety of aircraft operations... State and local agencies are free to set more stringent land use compatibility policies.").

Moreover, the FAA's Determination of No Hazard Finding ("NHD") for the Project's wind turbines included in Appendix G to the DEIR reaffirms this principal with respect to the instant Project in particular. It expressly states that it "does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State or local government body."

A recent decision from the Iowa Supreme Court addressing a situation analogous to the present one provides a case in point. *Carroll Airport Commission v.*

Danner (2019) 927 N.W.2d 635. After a detailed survey of the federal and state cases on this issue, *Carroll* upheld injunctive relief granted to an airport land use commission to tear down a grain "leg" (bucket elevator) that was constructed in a flight path without the proper approvals from the commission. *Id.* at 648-53. The farmer claimed, as does the DEIR here, that the commission's approval process was preempted by the FAA and that the FAA's no-hazard determination regarding the structure was conclusive. *Id.* at 641. Notably, the no-hazard determination for the structure there contained language identical to that used for the Project here, stating that it "does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body." *Id.*

> The court explained its reasoning for rejecting preemption as follows:
>
> On balance, we decline to hold the FAA no-hazard determination preempted enforcement of local zoning requirements. We reiterate that '[t]here is a presumption against preemption.' *Huck*, 850 N.W.2d at 363 (alteration in original) (quoting *Ackerman*, 586 N.W.2d at 213). Federal courts recognize that the FAA's "hazard/no-hazard determination has no enforceable legal effect" and "[t]he FAA is not empowered to prohibit or limit proposed construction it deems dangerous to air navigation." *Aircraft Owners & Pilots Ass'n*, 600 F.2d at 966–67. Accordingly, that role must fall to state and local government, indicating Congress left room for "cooperative federalism." *See Freeman*, 848 N.W.2d at 83. In our view, the better reasoned authorities discussed above hold state and local regulators can impose stricter height restrictions on structures in flight paths notwithstanding an FAA no-hazard determination. Finally, we rely on the very language of this specific no-hazard determination, which expressly warned the Danners that they still must comply with state and local laws.

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Id. at 653. The rationale provided in *Carroll* applies with equal force here.

It is also consistent with the guidance provided by the California Department of Transportation, which is the state agency that oversees implementation of the State Aeronautics Act. *See* Handbook at 3-33 ("[A]n FAA DNH [determination of no hazard] is not a determination that no airport land use compatibility issues exist, and an ALUC may find a project incompatible for other reasons, regardless of the issuance of a DNH."); *see also id.* at 3-48 & *Muzzy Ranch Co. v. Solano County Airport Land Use Com.* (2008) 164 Cal. App. 4th 1, 12 ("*Muzzy Ranch II*") (explaining differences between ALUC

compatibility review for military airports and other standards); *Sierra Pacific Holdings, Inc. v. County of Ventura* (2012) 204 Cal.App.4th 509 (FAA safety standards do not preempt state tort law regarding obstructions near airport runway). There is no federal preemption of ALUC's review of the Project.

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B. The LUCP Provisions Apply to SMUD.

Next, the DEIR claims that there is no issue here because "the LUCP provisions do not apply to SMUD WTG facilities under section 53091 of the Government Code (Subdivisions d and e)." DEIR at 3.9-6; *see also* DEIR at 3.7-13, 3.7-22 (concluding same with respect to the Project's air safety impacts). The DEIR's conclusions in this regard conflict with the express provisions of state law, as explained in our January 9th letter on the NOP. By failing to acknowledge that the ALUC review requirements of the Act apply to the Project, the DEIR misleads the public. To ensure that the public—and SMUD decisionmakers—have a full and accurate understanding of the Project and the regulatory process governing its approval, the DEIR must be revised and recirculated to accurately set forth the regulatory setting. Because SMUD failed to do so in the DEIR, we provide that description here.

To begin, the Act broadly empowers ALUC to review the plans, regulations, and actions of local agencies to ensure compatibility with the appropriate LUCP. In granting this authority, the Legislature made clear that ALUC's jurisdiction reaches beyond cities and counties to include special districts and other local agencies such as SMUD. Indeed, the Legislature specifically amended the Act in 2000 to remove any doubt on this point, providing that "special districts, school districts, and community college districts are included *among* the local agencies that are subject to" ALUC review. Pub. Util. Code § 21670(f) (emphasis added); *see also* Senate Floor Bill Analysis for SB 1350 (August 2000) at ¶ 27 (rejecting the Napa Sanitation District's assertion that it was not subject to ALUC authority).

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Municipal utility districts such as SMUD are organized under the laws of the State to provide "governmental, or at least quasi-governmental," services to regional service territories. *Sacramento Mun. Util. Dist. v. County of Sonoma* (1991) 235 Cal. App. 3d 726, 733. SMUD is therefore plainly "among the local agencies" that are subject to ALUC review under the Act. *See* Pub. Util. Code § 21670(f). Thus, without an explicit statutory exemption, SMUD must comply with ALUC's review procedures.

The DEIR asserts that Government Code section 53091 provides such an exemption. It does not.

Government Code section 53091 reads, in relevant part, as follows:

> (a) Each local agency shall comply with all applicable building ordinances and zoning ordinances of the county or city in which the territory of the local agency is situated.
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> …
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> (d) Building ordinances of a county or city shall not apply to the location or construction of facilities for the production, generation, storage, treatment, or transmission of water, wastewater, or electrical energy by a local agency.
>
> (e) Zoning ordinances of ***a county or city*** shall not apply to the location or construction of facilities for the production, generation, storage, treatment, or transmission of water, or for the production or generation of electrical energy, facilities that are subject to Section 12808.5 of the Public Utilities Code, or electrical substations in an electrical transmission system that receives electricity at less than 100,000 volts. Zoning ordinances of a county or city shall apply to the location or construction of facilities for the storage or transmission of electrical energy by a local agency, if the zoning ordinances make provision for those facilities.

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This statutory provision does not exempt SMUD from compliance with the LUCP. On its face, Government Code section 53091 pertains only to "applicable building ordinances and zoning ordinances of [a] county or city." As a matter of law, ALUC is neither a county nor a city. Instead, it is an independent governmental entity empowered and entrusted by the Legislature to implement and safeguard the Act's important public purposes. *See, e.g.*, Pub. Util. Code § 21674; *Muzzy Ranch Co. v. ALUC* (2007) 41 Cal.4th 372, 384-85 (Pursuant to the Act and Government Code, "an airport land use compatibility plan can operate like a multijurisdictional general plan to trump the land use planning authority that affected jurisdictions might otherwise exercise through general and specific plans or zoning."). Accordingly, under the plain terms of the statute, the exemption set forth in section 53091(e) does not apply to ALUC's LUCP.

In short, under the plain language of the statute, SMUD cannot rely on section 53091 for an exemption from ALUC review.

C. SMUD Does Not Have the Authority to Overrule ALUC, Nor Would Such Authority Obviate the Need for CEQA Review.

The final reason the DEIR gives for ignoring CEQA's requirement to analyze the Project's relationship to the LUCP is that "SMUD, as a local agency, can overrule the ALUC determination consistent with the State Aeronautics Act." DEIR at 3.9-6; *see also* DEIR at 3.7-8, 3.7-13, 3.7-22 (citing Pub. Util. Code §§ 21674.7, 21676 and 21676.5). In other words, the DEIR claims that because SMUD can allegedly "overrule" any determination ultimately made by ALUC, SMUD can skip ALUC's review procedures. The DEIR also asserts that, as a result, it need not analyze or mitigate any potential land use inconsistency with the LUCP. The DEIR is wrong on both counts.

First, as with ALUC, SMUD is not a city or a county and thus it does not possess the power the Legislature granted to cities and counties—and *only* to cities and counties—to overrule certain ALUC determinations. *See* Pub. Util. Code § 21676 (granting certain override powers to cities and counties by virtue of their power to adopt and amend general plans); § 21676.5 (same); *see also Pac. Gas & Elec. Co. v. Sacramento Mun. Util. Dist.*, 92 F.2d 365, 366 (1937) (noting that "[SMUD] is not coterminous with any county or municipality."). By virtue of their independent land-use planning authority, cities and counties possess unique discretion to determine whether their land-use plans conform to the ALUC's compatibility criteria. Pub. Util. Code §§ 21676(a), 21676.5. SMUD, by contrast, does not possess independent land-use planning authority to create a general plan and thus cannot avail itself of the powers the Act grants to cities and counties. Thus, the plain language of the Public Utilities Code does not give SMUD the authority to overrule ALUC or the LUCP. 5-12

Second, even if SMUD did have the power to overrule ALUC—which it does not—the DEIR may not assume that such an override is a foregone conclusion and on that basis ignore the Project's potentially significant land use impacts. The override provisions in the Act that the DEIR cites require a certain procedure to be followed before an override could take effect. *See* Pub. Util. Code §§ 21676 and 21676.5. This procedure would begin with ALUC completing its consistency review, and then the local agency approving an override only upon a two-thirds vote and making certain findings. *Id.* Thus, as the California Supreme Court has held, "even in the event a local authority invokes the override provision, the State Aeronautics Act scheme still controls." *Muzzy Ranch*, 41 Cal.4th at 384. Furthermore, under CEQA, an agency may make any override findings only *after* a full and complete environmental review. *See* CEQA Guidelines § 15093. Thus, even if SMUD's Board could ultimately override ALUC's determination (and it cannot), SMUD must still submit its Project to ALUC for a consistency determination. And likewise the DEIR must still disclose the Project's relationship to the

LUCP and the significance of any inconsistencies, and evaluate all feasible mitigation measures to lessen such impact.

One unfortunate overall impression this DEIR creates on SMUD's behalf is that SMUD hopes to turn a blind eye to all local considerations and criteria, wishes ultimately to disregard them, and plans instead to proceed unilaterally on nothing more than its own fiat. Meanwhile, Travis Air Force Base: is the largest single employer in Solano County, accounting for nearly 10 percent of the county's total jobs; is responsible for vital strategic airlift and air refueling missions circling the globe; is the West Coast terminal for aeromedical evacuation aircraft returning sick or injured patients from the Pacific area; and regularly undertakes humanitarian response efforts around the globe, such as to areas devastated by hurricanes and earthquakes.[1]

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In sum, SMUD must revise and recirculate the DEIR to include an adequate analysis of the Project's land use impacts, including its relationship to the LUCP, and must consider all feasible mitigation measures to lessen such impacts, including but not limited to the measures discussed below.

III. The DEIR Fails To Adequately Analyze or Mitigate the Project's Significant Impacts.

The DEIR begins with the following critical statement regarding the Project's potentially significant safety hazard to air traffic:

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> The project site lies within the planning boundary of the Travis AFB LUCP, which contains policies designed to promote land use compatibility with airport operations. Placement of WTGs have the potential to intrude into navigable airspace, thereby increasing the

[1] Solano County General Plan, at pp. ED-4 to ED-5.60th Air Mobility Wing Fact Sheet (Feb. 12, 2016) [at http://www.travis.af.mil/About-Us/Fact-Sheets/Display/Article/855903/60th-air-mobility-wing/]; 2nd Lt. Sarah Johnson, *'Doing the good thing': Travis aids mission to improve education in Haiti* (Nov. 28, 2017) [at http://www.jbcharleston.jb.mil/News/Article/1382960/doing-the-good-thing-travis-aids-mission-to-improve-education-in-haiti/]; Master Sgt. Joseph Swafford, *BEEliners bring humanitarian aid to St. Croix* (Sept. 26, 2017) [at http://www.travis.af.mil/News/Article/1325298/beeliners-bring-humanitarian-aid-to-st-croix/]; Taylor Buley, *Solano airmen, humanitarian heroes, at Travis Air Force Base* (Sept. 25, 2017) at p. A1 [at https://www.dailyrepublic.com/solano-news/vacaville/solano-airmen-humanitarian-heroes-at-travis-air-force-base/].

> risk of aircraft collision, or causing interference with radar signals used by air traffic control. Therefore, this impact would be **potentially significant**.

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DEIR at 3.7-21 (emphasis in original). The "analysis" that follows this statement, however, is woefully inadequate.

After admitting that the Project would "increas[e] the risk of aircraft collision" and "caus[e] interference with radar signals," the DEIR then proceeds to dismiss these grave impacts with a series of deflections.

First, as with the Project's land use impacts, the DEIR tries to avoid a deeper analysis of this potentially significant impact by claiming SMUD is either exempt from or can override the LUCP. DEIR at 3.7-22. As explained in detail above, this premise is legally faulty. *See supra* Part II.2 & 3. Equally important, even if SMUD were exempt from ALUC review (which it is not), it does not logically follow that the identified potentially significant impact, which is based on physical conditions not legal constructs, somehow disappears. Rather, CEQA dictates that the DEIR must analyze the actual environmental impact, regardless of the legal status of the Project's review. *See, e.g., Communities for a Better Environment v. S. Coast Air Quality Management Dist.* (2010) 48 Cal.4th 310, 320-21.

5-14

CEQA requires an EIR to "include[] sufficient detail to enable those who did not participate in its preparation to understand and to consider meaningfully the issues the proposed project raises." *Sierra Club v. County of Fresno* (2018) 6 Cal.5th 502, 510. Furthermore, the DEIR must adequately discuss the nature of, and analyze, the Project's impacts, not just baldly conclude that an impact may be potentially significant. *Id.* at 514 ("[T]he adequacy of an EIR's discussion of environmental impacts is an issue distinct from the extent to which the agency is correct in its determination whether the impacts are significant. 'An EIR's designation of a particular adverse environmental effect as 'significant' does not excuse the EIR's failure to reasonably describe the nature and magnitude of the adverse effect.'") Therefore, the EIR must explain the *nature* and *extent* of the increased risks for aircraft collision and radar interference in a manner calculated for the public to understand. Furthermore, it must set forth standards for determining how much of an increased risk and interference would be considered a significant impact under CEQA and why. When it comes to potential loss of human life and military readiness, is any such increase acceptable? The purpose of CEQA is to disclose such issues so that the public and decision-makers may be adequately informed of the consequences of their decisions.

5-15

Instead of undertaking this necessary analysis, the DEIR relies entirely on the FAA's NHD, asserting that document "described and dismissed" the air safety concerns raised by ALUC. DEIR at 3.7-22. This approach is unsupported, both factually and legally. To begin, the NHD did not "dismiss" ALUC's concerns. Instead, it concluded that the wind turbines would be within the line of sight of Travis, as well as three additional facilities, and "will affect the quality and/or availability of radar signals. The effects would be unwanted primary returns (clutter) and primary target drops, all in the area of the turbines. Tracked primary targets could diverge from the aircraft path and follow wind turbines, when the aircraft is over or near the turbines." NHD at 5. The NHD ultimately concludes that such adverse effects are not unacceptable under ***FAA standards*** based on an evaluation of factors that are "not published for public use and are not circulated for public comment." *Id.* at 6 (emphasis added).

Critically, the NHD is clear that it does not purport to satisfy anything other than the FAA's limited criteria.[2] Rather, as noted, the Determination explicitly requires the applicant to comply with "any law, ordinance, or regulation of any Federal, State, or local government body." *Id.* at 3; *see also id.* at 5 (noting that ALUC's comments were not necessarily considered an "'objection' but rather statements," some of which "are simply repeating applicable law/rule/orders."). Therefore, the NHD's ultimate conclusions are both (1) based on the understanding that the applicant would be separately complying with the LUCP and CEQA; and (2) not intended to be, and in fact are not, based on a CEQA-compliant analysis that is sufficient as a public informational document.

Indeed, the NHD does not even purport to review the entire proposed Project. As discussed above, the "Solano 4 Wind Project" is for 22 proposed WTGs, the final model and placement of which has not been determined. Yet, the NHD considered 19 specific proposed structures in specific locations with specific heights. The DEIR provides no assurances that the final Project will align with what the FAA reviewed. Moreover, as to the 3 turbines beyond the 19 reviewed by the FAA, the DEIR's analysis under Impact 3.7-3 appears to be based upon nothing whatsoever.

5-16

[2] For example, to the extent that the FAA received input from the military on the No Hazard Determination, such input would be limited to commenting on whether the Project would have an "adverse impact on military operations and readiness." To qualify as having an "adverse impact" for military purposes, the impact must be "demonstrable and [] likely to impair or degrade the ability of the armed forces to perform their warfighting missions." 10 U.S.C. § 183a(h)(1); 49 U.S.C. § 44718(h)(1).

CEQA requires that an EIR evaluate the whole Project's potentially significant environmental impacts, which is far broader in scope than an air "hazard" as defined and considered by the FAA. *Compare, e.g.*, Cal. Pub. Resources Code §§ 21002.1, 21060.5 *with* 14 C.F.R. § 77.17; *see also Town of Barnstable v. FAA* (2014) 408 U.S.App.D.C. 150, 161 (FAA determination insufficient to complete a proper environmental analysis under NEPA). Furthermore, CEQA case law makes clear that an EIR may not simply rely on compliance with certain regulatory standards to avoid an analysis of a Project's potentially significant impacts. *See, e.g.*, *Californians for Alternatives to Toxics v. Dept. of Food & Agriculture* (2005) 136 Cal.App.4th 1, 15-20 (reliance on safety regulations "is inadequate to address environmental concerns under CEQA"; EIR must independently analyze the project's impacts, including safety impacts); *E. Sacramento Partnerships for a Livable City v. City of Sacramento* (2016) 5 Cal.App.5th 281, 302-03 (agency improperly used city's general plan standard as sole threshold to avoid finding significant traffic impacts). 5-17

As set forth in further detail in the report by Dr. Johnson of the Regulus Group (Exhibit 1), it is clear that even current SMUD WTG operations have resulted in impacts. In order to assess whether the addition of even larger and taller WTGs would result in significant impacts, the DEIR would need to provide far more information that it currently does. For example, the DEIR would need to include an adequate assessment of (1) the increase in ATC Minimum Vectoring Altitudes (MVA) for the area of the WTGs; (2) objective metrics for radar interference; (3) clutter and dual tracks; and (4) workload for operator engagement with aircraft because of clutter. *See* Exhibit 1. Without providing information on these topics, the DEIR fails as an informational document and fails to provide substantial evidence to support its determination that the Project will result in insignificant air safety impacts. 5-18

Once the DEIR adequately evaluates the Project's significant air safety impacts, it must evaluate all potentially feasible mitigation measures and feasible alternatives to lessen or avoid such impacts. Pub. Res. Code § 21002; CEQA Guidelines §15126.4. Currently, the DEIR relies only upon the NHD's suggested mitigation to "mark and light wind turbine generators during construction" (Mitigation Measure 3.7-3) and then determines, without further analysis, that "implementing this mitigation measure would reduce the impact of hazards to aviation *during construction* to a less-than-significant level." DEIR at 3.7-23 (emphasis added). This is inadequate under CEQA for at least two reasons. 5-19

First, Measure 3.7-3 only purports to alleviate *construction* impacts. It does not address impacts related to the wind turbines *operation* at all. It also does not address

the fact that the structures themselves (even in the daytime) can result in radar interference. *See* Exhibit 1.

CEQA requires much more. The DEIR must consider all potentially feasible mitigation to avoid operational impacts. For example, the DEIR acknowledges, but fails to further consider, the DOD's "continued efforts to develop new strategies to identify mitigation solutions to radar interference issues, including development of new radar technology." DEIR at 3.7-13.

5-19 Cont'd

One obvious ongoing such effort that the DEIR inexplicably fails to consider is the Wind Turbine Radar Interference Mitigation (WTRIM) pilot mitigation program being conducted at the very airbase most likely to be impacted by the Project—Travis Air Force Base. As detailed in Dr. Johnson's memorandum, this pilot project is studying how small low-cost in-fill radar systems might be used to mitigate wind turbine radar interference. *See* Exhibit 1. The study is nearing completion and clearly has the potential to mitigate any significant impacts from the Project on radar systems. *Id.* Furthermore, another mitigation effort underway is to develop radar processing algorithms that may reduce clutter seen on the ATC screens. *Id.*

5-20

The DEIR must consider all such mitigation solutions to determine if they could feasibly be implemented in conjunction with the Project. This could include, *inter alia*: (1) SMUD contributing its fair share to such solutions, and/or (2) SMUD agreeing to schedule Project construction in tandem with the implementation of new radar technologies. The DEIR must also consider any feasible alternate configurations for the wind turbines that would lessen air safety impacts, including moving WTGs from the line of sight. *Id.*

Second, even with respect to construction impacts, it is impossible to know whether Measure 3.7-3 would actually reduce impacts to a less-than-significant level because the DEIR fails to adequately reveal the nature and extent of the Project's construction impacts. Nor does the DEIR reveal how much the impact would be lessened by implementation of the mitigation. "CEQA EIR requirements are not satisfied by saying an environmental impact is something less than some previously unknown amount." *Ukiah Citizens for Safety First v. City of Ukiah* (2016) 248 Cal.App.4th 256, 264 (citation omitted).

5-21

IV. The DEIR Fails To Adequately Analyze or Mitigate the Project's Significant Cumulative Impacts.

As the DEIR acknowledges, CEQA requires the lead agency to analyze and mitigate a Project's potentially significant cumulative impacts. CEQA defines cumulative impacts as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." Guidelines § 15355; *see also Communities for a Better Env't v. Cal. Res. Agency*, 103 Cal.App.4th at 120. An effect is "cumulatively considerable" when the "incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects." Guidelines § 15065(a)(3). A proper cumulative impact analysis is "absolutely critical," *Bakersfield Citizens for Local Control v. City of Bakersfield* (2004) 124 Cal.App.4th 1184, 1217, as it is a mechanism for controlling "the piecemeal approval of several projects that, taken together, could overwhelm the natural environment," *Las Virgenes Homeowners Fed'n, Inc. v. County of Los Angeles* (1986) 177 Cal.App.3d 300, 306.

As explained by Dr. Johnson, utility scale turbines impact primary surveillance radar systems when the turbines are located within the line of sight of radar, and prior turbine projects in the area have already created an impact. *See* Exhibit 1. Yet, instead of actually analyzing this impact, the DEIR disposes of this significant cumulative risk in one conclusory paragraph. *See* DEIR at 4-12.

5-22

This paragraph, however, contains no actual analysis of the impact. Instead, it relies entirely on the FAA's NHD: "Regarding impacts on air traffic, the FAA concluded that the cumulative impact of the proposed WTGs, when combined with other proposed and existing structures, is not considered to be significant." *Id.* However, neither the DEIR nor the NHD provides any facts or discussion that demonstrate the latter document evaluated cumulative impacts in the manner required by CEQA. For example, the NHD does not reveal which other projects it considered in its cumulative analysis, and does not purport to use either of the methods prescribed by CEQA Guidelines section 15130. Further, as discussed above, the NHD looks only at cumulative impacts in the context of the FAA's standards, which do not purport to align with CEQA's definition of cumulative impacts or its requirements for a cumulative impacts analysis under California state law. Thus, the DEIR must undertake or present an independent evaluation of the Project's significant cumulative air safety impacts that complies with CEQA. The DEIR cannot attempt to get by on just bare conclusions, nor on an assumption that the FAA NHD, without needing to or meaning to, evaluated such impacts in a way that would conform to CEQA's standards.

V. The DEIR Fails to Adequately Evaluate Alternatives to Lessen or Avoid the Project's Significant Impacts.

Under CEQA, a proper analysis of alternatives is essential to comply with the Act's mandate that significant environmental damage be avoided or substantially lessened where feasible. Pub. Res. Code § 21002; CEQA Guidelines §§ 15002(a)(3), 15021(a)(2), 15126(d); *Citizens for Quality Growth v. City of Mount Shasta* (1988) 198 Cal.App.3d 433, 443-45. As stated in *Laurel Heights I*, "[w]ithout meaningful analysis of alternatives in the DEIR, neither the courts nor the public can fulfill their proper roles in the CEQA process . . . . [Courts will not] countenance a result that would require blind trust by the public, especially in light of CEQA's fundamental goal that the public be fully informed as to the consequences of action by their public officials." 47 Cal.3d at 404. 5-23

Critically, an EIR must consider a "reasonable range" of alternatives "that will foster informed decision-making and public participation." CEQA Guidelines § 15126.6(a) (emphasis added); *Laurel Heights I*, 47 Cal.3d at 404 ("An EIR's discussion of alternatives must contain analysis sufficient to allow informed decision-making."). The discussion of alternatives must focus on alternatives to the project or its location that are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly. CEQA Guidelines § 15126.6(b). The DEIR for the Project fails to heed these basic mandates.

After presenting CEQA's required "no project" alternative, the DEIR offers only *one* project alternative (the "Reduced Turbine Height Alternative"), which would involve placement of 27 WTGs in a configuration similar to that of the proposed project. DEIR at 6-4 to 6-10. However, the DEIR claims that, except with respect to aesthetic impacts, the Reduced Turbine Height Alternative would result in similar or *greater* environmental impacts than the Project. *See* DEIR at 6-11. For example, with respect to air safety impacts, the DEIR states: "The Reduced Turbine Height Alternative would introduce structures that exceed the 200 foot threshold. … The placement of more WTGs on the project site may increase radar interference compared to the proposed project as the density of WTGs is greater than for the project. Overall, the Reduced Turbine Height Alternative may result in greater hazards or hazardous materials impacts compared to the project. (Greater)." DEIR at 6-10. 5-24

While there is no "magic number" for how many alternatives an EIR should examine to present a "reasonable range," at a minimum CEQA requires an agency to examine at least one potentially feasible alternative to try to avoid or lessen significant 5-25

environmental impacts that are central to the Project. *See Watsonville Pilots Ass'n.*, 183 Cal.App.4th at 1089-90 (EIR was deficient for failing to include reduced development alternative that would avoid or lessen the project's primary growth-related significant impacts); *Habitat and Watershed Caretakers v. City of Santa Cruz* (2013) 213 Cal.App.4th 1277, 1285, 1305 (invalidating EIR that failed to discuss any feasible alternative that would lessen the project's primary water supply impact). Here, presenting only one alternative that would not even reduce, but in fact would increase, the Project's significant environmental impacts does not contribute to a "reasonable range" of alternatives. *See* § 21100(b)(4); Guidelines § 15126.6(a) & (b). 5-25 Cont'd

The DEIR itself underscores its failure in providing a reasonable range of alternatives when it is forced to identify the proposed Project itself as the environmentally superior "alternative." DEIR at 6-12. This defeats the purpose of an alternatives analysis, and does not meet either the letter or the spirit of CEQA's requirement that the DEIR identify an "environmentally superior" alternative to the proposed project. CEQA Guidelines § 15126.6.

There are numerous potentially feasible alternatives that the DEIR could and should have considered to reduce the Project's potentially significant environmental impacts. For example, a revised DEIR should evaluate an alternative configuration of the WTGs that would avoid or reduce the Project's air safety and land use impacts. *See* Exhibit 1. Likewise, a revised DEIR should evaluate alternative phasing for the Project that is coordinated with the implementation of new radar technologies that reduce or eliminate the air safety impacts from WTGs. *See id.* 5-26

To the extent SMUD claims that additional alternatives would not achieve the Project objective of meeting SMUD's Renewable Portfolio Standard ("RPS") obligations, an EIR may not so narrowly define project objectives as to preclude an adequate evaluation of alternatives. *See Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692, 735-37.

Furthermore, as detailed in the attached Exhibit 2, RPS renewables can come from a range of sources and from all over the western part of North America. Under the Renewables Portfolio Standard, "eligible renewable sources" include: biodiesel, biomass, biomethane (including digester gas, and landfill gas), fuel cells using renewable fuels, geothermal, hydro-electric (including conduit hydroelectric, incremental hydroelectric generation from efficiency improvements, small hydroelectric, and water supply and conveyance), municipal solid waste combustion and conversion, ocean wave, ocean thermal, solar (including photovoltaic and solar thermal electric), tidal current, and wind. And renewable generation facilities eligible under the Renewables Portfolio 5-27

Standard may be located anywhere within the region of the Western Electricity Coordinating Council, which includes all or parts of the 14 western United States, two Canadian provinces, and the northern portion of Baja California, Mexico.[3] Therefore, in addition to alternatives in terms of potential project design in this location, there are wide ranging alternatives in terms of location and type of project.

5-27 Cont'd

Also, there are at least some temporal alternatives. Even if the Renewables Portfolio Standard did require the construction of this specific project here (which it does not), it would not require the Project's construction right now. The Renewables Portfolio Standard requires procurement of renewables such that, overall, they will constitute a specified *percentage* of annual retail sales by specified *target dates*. That does not compel SMUD to construct this particular Project within a year's time. In short, the range of alternatives available to SMUD includes numerous options, which, in the most general terms, include building something else, somewhere else, at some other time. And CEQA requires consideration of those alternatives.

5-28

Likewise, according to SMUD's own Policy SD-9, attached hereto as Exhibit 3, SMUD also meets its Net Zero goal via other methods including investments in vehicle and building electrification and energy efficiency. SMUD's Policy SD-9 also states that "[i]n meeting GHG reduction goals, SMUD shall emphasize local and regional environmental benefits." Such regional environmental benefits would be furthered by ensuring consistency with the LUCP. Finally, as noted, an alternative need not meet every Project objective or be the least costly in order to be feasible. *See* CEQA Guidelines § 15126.6(b).

5-29

VI. The DEIR Must Be Recirculated.

Under California law, the present EIR cannot properly form the basis of a final EIR. CEQA and the CEQA Guidelines describe the circumstances that require recirculation of a draft EIR. Such circumstances include: (1) the addition of significant new information to the EIR after public notice is given of the availability of the DEIR but before certification, or (2) the draft EIR is so "fundamentally and basically inadequate

5-30

[3] California Energy Commission, *Renewables Portfolio Standard Eligibility, 7th Ed., Staff Final Guidebook* (April 2013), at pp. 16, 163; California Public Utilities Commission website on *33% Procurement Rules*, [at http://www.cpuc.ca.gov/PUC/energy/Renewables/hot/33RPSProcurementRules.htm]; Western Electricity Coordinating Council, *Fact Sheet* [at https://www.wecc.biz/_layouts/15/WopiFrame.aspx?sourcedoc=/Administrative/Fact%20Sheet%20-%20REVISED.pdf&action=default&DefaultItemOpen=1].

and conclusory in nature that meaningful public review and comment were precluded." CEQA Guidelines § 15088.5.

Here, both circumstances apply. Decision-makers and the public cannot possibly assess the Project's impacts through the present DEIR, which is riddled with errors. Among other fundamental deficiencies, the DEIR repeatedly understates and does not provide the relevant information regarding the Project's significant land use and air safety impacts. Instead, it relies exclusively on the FAA's No-Hazard Determinations, which were prepared for another purpose, and assumes without analysis that minimalistic mitigation measures would effectively reduce the Project's impacts on air safety and land use. In order to resolve these issues, SMUD must prepare a revised EIR that would necessarily include substantial new information, including the information included herein. Furthermore, we reiterate that it is mandatory and imperative that SMUD obtain a consistency determination from ALUC prior to proceeding with the Solano 4 Wind Project. ALUC intends to pursue all legal means necessary to enforce this requirement.

5-30 Cont'd

ALUC looks forward to working with SMUD to ensure that any future development of the Solano 4 site prioritizes the health, safety, and welfare of Solano County's residents, and is consistent with the development criteria established in the Travis Air Force Base LUCP. Please do not hesitate to contact us if you have any questions or concerns about this letter.

Very truly yours,

SHUTE, MIHALY & WEINBERGER LLP

Robert "Perl" Perlmutter

Amy J. Bricker

Amy J. Bricker

cc: Thomas Randall, Chair, Solano County ALUC
Lee Axelrad, Deputy County Counsel

Exhibit List

Exhibit 1: Memorandum from Dr. Jerry Johnson, Director of Engineering, Regulus-Group, LLC, Washington, DC; Statement of Qualifications

Exhibit 2: Union of Concerned Scientists, "The Clean Energy Race: How Do California's Public Utilities Measure Up?" SMUD Fact Sheet

Exhibit 3: SMUD Policy SD-9

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EXHIBIT 1

engineering the skies regulus group 238 North Main Street, Woodstock VA 22664

From: Dr. Jerry Johnson, Director of Engineering, Regulus-Group, LLC, Washington, DC
To: Shute, Mihaly, & Weinberger, LLP, San Francisco, CA
Subject: Review of Draft EIR for Additional wind turbines near Travis Air Force Base (Solano 4 Wind Project)
Date: Friday, August 6, 2019

Background
I have reviewed the portions of SMUD's Draft Environmental Impact Report for the Solano 4 Wind Project relating to air safety impacts. There are several key points about the existing wind turbine project and air operations that I'd like to mention. These are:

1. In general, it is well known that utility scale wind turbines impact primary surveillance radar systems when the turbines are located within the line of sight of radar. We discuss this issue further below.
2. Travis Air Force Base provides air traffic control services in the area where the proposed wind turbines are to be installed.
3. Travis Air Force Base air traffic controllers help maintain safe separation distances between aircraft operating in and through this area, including military and civilian aircraft up to 10,000 feet.
4. The existing turbines in the area of SMUD's current proposal have resulted in turbine radar interference affecting the primary surveillance radar system used by Travis Air Force Base.
5. Travis Air Force Base moved, and therefore lost, a circling approach as a consequence of existing turbines.
6. Travis would like to reclaim this airspace for its air operations.

5A-1

I would like to make the following points about SMUD's plan to add even more wind turbines to the wind resource area near Travis AFB.

Point #1: SMUD's Draft Environmental Impact Report (DEIR) does not include information needed to inform decision makers and the public of the scope of impacts because of the project.

The DEIR refers to the FAA aeronautical study (FAA 2019) conclusion:

> "no substantial adverse effect on the safe and efficient utilization of the navigable airspace by aircraft or on the operation of air navigation facilities."

5A-2

However, the DEIR does not mention that study states:

> "The proposals will affect the quality and/or availability of radar signals. The effects would be unwanted primary returns (clutter) and primary target drops, all in the area of the turbines. Tracked primary targets could diverge from the aircraft path and follow wind turbines, when the aircraft is over or near the turbines."

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When wind turbine radar interference (that is, clutter) is high, the controller workload could be increased. More clutter tracks impair the controller's ability to direct air traffic. This impairment is due to the following:

1. Clutter tracks can produce track duals.
    - These dual tracks require the controller to work with aircraft to determine which aircraft target is real and which is false.

2. The clutter tracks and false targets require controllers to increase separation distances between aircraft.
    - ATC is responsible for safe separation between aircraft and a clutter track is viewed as another aircraft in the air space. This added aircraft requires separation from the other aircraft.

3. Pilots, in response to ATC, may have to effect maneuvers (for example, directed turns) for the controller to discern which track is real and which is clutter.
    - This increases the amount of radio communications between ATC and pilots thereby adding to the controller's workload.

5A-2 Cont'd

Point #2: The DEIR report indicates the structures (wind turbines) would not be a hazard to air navigation, provided the turbines are marked with white paint and properly lighted.

Air lighting is necessary, but it is an obstruction avoidance system and not a radar interference mitigation technique. The lighting systems will not mitigate the interference of wind turbines on radar performance or air traffic control.

5A-3

Point #3: The DEIR does not mention the ATC Minimum Vectoring Altitudes (MVA) for the area of the turbines would need to be increased.

FAA identified that "the adverse effect as described above on the NCT MVA." While increasing the MVA doesn't impact a significant number of operations, it is a noted adverse effect.

5A-4

Point #4: The DEIR states the project could have potentially significant adverse impacts, but it does not discuss the impacts in a way that would enable the reader to know the degree or size of each type of impact.

For local public and decision makers to be informed of the degree or size of the potential impacts these proposed turbines present, the DEIR should state and discuss the following.

1. The effects on radar performance should be stated in terms of objective metrics.
    - Objective metrics allow decision makers to compare how the addition of new wind turbines will impact the primary radar.
    - These metrics include probability of false alarms and probability of detection.

5A-5

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2. The usual amount of clutter tracks over the wind turbine area should be stated and compared to any additional clutter expected by the new wind turbines.
    - Metrics such as frequency of clutter tracks (number of tracks per hour), average length of clutter tracks, minimum and maximum length of clutter tracks, and a history of the clutter over a 30-day period would help guide decision makers to assess the impact of the additional wind turbines.
    - Clutter tracks can produce track seductions (a real aircraft track is pulled to a false track) and track breaks. These are further phenomena that show the effects of wind turbines.

3. The expected number of dual tracks compared to real targets should be stated. This will tell the decision makers the effects on ATC operators and pilots, as noted above.
    - Metrics might include: the number of duals per hour; length of duals with customary statistics (such as, minimum length, maximum length, and average length, over a period of, say 30 days). These will help inform decision makers of the wind turbine effects.

4. The workload for operator engagement with aircraft because of clutter should be given to decision makers.
    - Metrics such as time spent directing aircraft due to clutter tracks (hours per month, say), frequency of aircraft told to change course because of clutter (number of aircraft per month, say) are examples.
    - It may be possible to determine workload issues with interviews of current ATC operators at Travis AFB.

5A-5 Cont'd

My suggestions do not mean those items or details needed to have been included in the FAA determinations. The FAA framed its response to FAA-specific requirements and made its determination. Still, the metrics above could show the effects of the wind turbine clutter on radar performance parameters, the controllers and, by extension, on pilots who respond to controller directions for separation.

Point #5: The DEIR fails to discuss other potentially feasible means to potentially mitigate the Project's adverse impacts.

- There is currently a Pilot Mitigation Program (PMP) at Travis AFB studying how small low-cost in-fill radar systems might be used to mitigate wind turbine radar interference. The PMP has concluded its data gathering work having operated 15 separate Civil Air Patrol flights (over 76-hours of flight time) with various combinations of flight paths, radars, STARS automation configurations, and operator evaluations. The PMP team is currently collecting these data and composing a final report for review and final dissemination.

- Infill radars are currently being evaluated for FAA validation so they can be used in the National Air Space. This effort is projected to take approximately 2 years.

5A-6

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- Another mitigation effort underway is development of radar processing algorithms which may reduce clutter seen on the ATC screens.

5A-6 Cont'd

While these efforts are promising they are not yet proven effective nor certified for use in the NAS. Consequently, the only way to guarantee turbines have no impact on a primary radar system today is to locate the turbines beyond line-of-sight of the radar.

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Jerry Johnson

BS Electrical Engineering, University of Texas at San Antonio
MS Electrical Engineering, University of Kansas
PhD Electrical Engineering, Kansas State University

Jerry Johnson has more than 26 years of engineering experience with 18 of them specifically in NAS Surveillance and Navigation Systems. Most recently he provided Systems Engineering Support to the FAA for the Spectrum Efficient National Surveillance Radar (SENSR) Program, the Wind Turbine Radar Interference Mitigation (WTRIM) working group, and the Surveillance Portfolio Analysis (SPA) working group with focus on developing a strategy for an National Airspace System (NAS) surveillance roadmap from legacy to future systems.
Dr. Johnson joined Regulus Group from Thales and has excellent leadership skills that have allowed him to successfully lead engineering teams to derive requirements, design and develop highly complex products on an aggressive schedule and budget in the aerospace, telecommunications and manufacturing industries including several multi-national projects. Previous to Thales, Jerry served as a project engineer for BioServe Space Technologies where he participated in the design and integration of Life Science research hardware for 10 U.S. space shuttle missions and 2 Russian MIR missions.

Dr. Johnson acquired a Bachelor of Science in Electrical Engineering from the University of Texas at San Antonio, his Master of Science degree in Electrical Engineering from the University of Kansas, and a PhD in Electrical Engineering from Kansas State University.

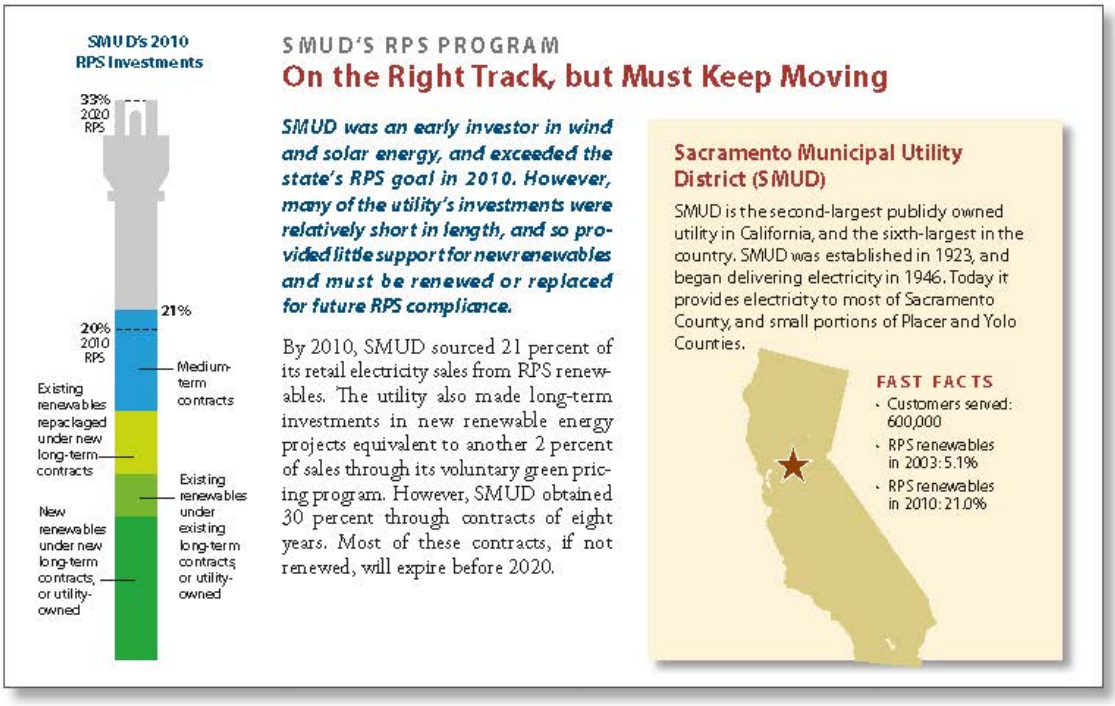
EXHIBIT 2

California's local publicly owned utilities, which supply about a quarter of the electricity used in the state, have made significant strides in investing in clean, renewable energy since the state passed its first renewable energy purchase law in 2002. The Renewables Portfolio Standard (RPS) was enacted to help California transition away from polluting fossil fuels and invest in electricity generation from renewable sources such as the wind and sun, in order to improve air quality, reduce global warming pollution, and expand the state's green economy. The original RPS set a goal for each California utility to obtain 20 percent of its electricity sales from renewable sources by 2010. In 2011, the law was strengthened to require all utilities to obtain 33 percent from renewables by 2020.

Not All Investments in Renewable Electricity Are Created Equal

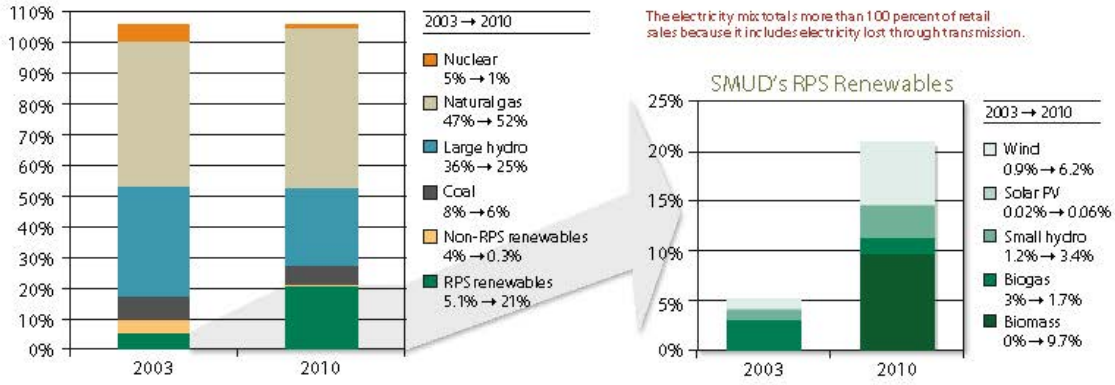
While a utility can take many approaches to procuring renewable energy, direct ownership and long-term contracts best support the development of new resources by providing financial security to developers. These long-term investments also lock in stable electricity prices for customers and help put a utility on track to meet the 33 percent RPS.

We evaluated the renewable energy investments made by California's 10 largest publicly owned utilities. We then classified each utility into one of three categories: "sprinting ahead," "on the right track, but must keep moving," or "false start," based on how much it has promoted the development of new sources of renewable energy, and whether it is on track to meet the 33 percent RPS.



Photos: © Thinkstock/Jan Wlachels (wind); © Thinkstock/Daniel Grill (solar); © Flickr/Patrick Dirden (turbines in field)

SMUD's Electricity Mix, 2003 and 2010



What's Powering SMUD?

In 2003, SMUD relied on "unspecified" market purchases—purchases from other utilities, power traders, and the electricity spot market containing a mix of resources—for just under half of its electricity. The utility generated a quarter of its electricity from its own natural gas plants. SMUD's Upper American River Project and federally owned large hydropower facilities contributed another 25 percent of electricity sales. The utility relied on a mix of renewables for the remaining 5.1 percent.

By 2010, SMUD had built the Cosumnes natural gas plant, which delivered 29 percent of the utility's electricity needs. In total, SMUD relied on natural gas to supply 52 percent of total sales. From 2003 to 2010, SMUD quadrupled its renewables to 21 percent of retail electricity sales. These investments replaced "unspecified" power purchases, which declined to 17 percent in 2010.

SMUD's Renewables

SMUD built the nation's first utility-scale photovoltaic (PV) solar array in 1984, at Rancho Seco, the site of its closed nuclear facility. A decade later, SMUD built wind turbines on land it purchased in Solano County that now hosts 230 megawatts of capacity. By 2003, SMUD sourced 5.1 percent of its electricity from renewables. In addition to its early investments in solar and wind energy, SMUD procured electricity from an existing wood-waste biomass plant in Washington, its own small hydropower facilities, biogas from two local landfills, and two other wind projects that came online in 2003.

SMUD built the nation's first utility-scale PV solar array in 1984, at the site of its closed nuclear facility. A decade later, SMUD built wind turbines on land it purchased in Solano County that now hosts 230 MW of generation capacity.

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By 2010, SMUD was procuring 21 percent of its retail electricity sales from RPS renewables. From 2003 to 2010, SMUD signed additional contracts with existing small hydropower, biomass facilities in Washington and Idaho, existing small hydropower facilities in California, and biogas from two in-state landfills and a local dairy manure digester. The utility also invested in solar PV through its SolarShares program and the first installations under its feed-in tariff program.[1]

SMUD obtained 30 percent of its 2010 RPS mix through eight-year contracts. Most

1 SMUD's SolarShares program allows customers who cannot install solar on their roofs to invest in solar PV elsewhere and receive credit on their electricity bills for the energy those arrays produce. Of the 10 POUs we reviewed, SMUD is the only one to offer such a program.

of these brought electricity into the state temporarily from existing small hydropower and wood-waste biomass plants in Washington and Idaho. SMUD also purchased a 15-year contract for injected landfill gas from Shell Energy, collected at the McCommas Bluff landfill in Texas. The RPS-eligible electricity associated with this contract is generated at SMUD's Consumnes natural gas power plant. This contract comprised approximately 9 percent of SMUD's 2010 RPS mix. The CEC is currently reassessing how to treat the eligibility of injected landfill gas contracts for the RPS.

SMUD obtained another 37 percent of its 2010 RPS mix through 10- and 12-year contracts with out-of-state wood-waste biomass, local landfill biogas, and in-state small hydropower facilities. This group of contracts also included the 2003 contract with the High Winds wind facility in Solano County.

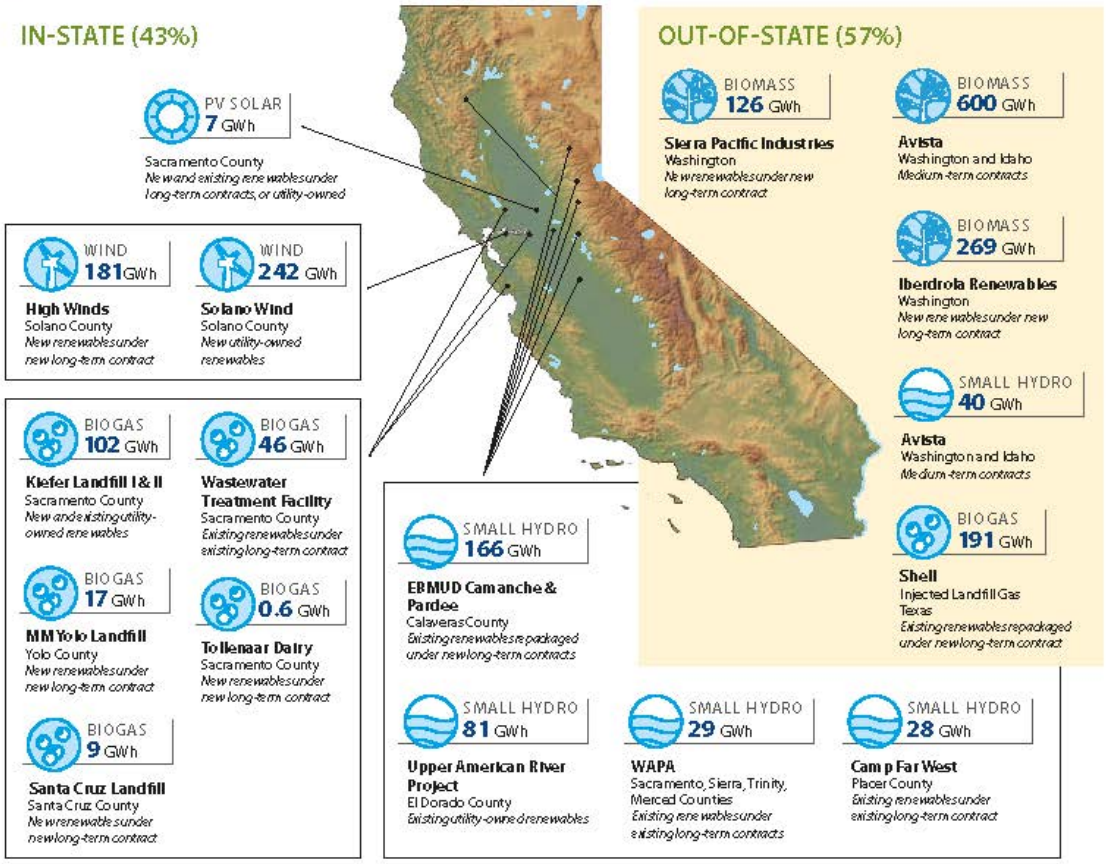
SMUD obtained just over a third of its 2010 RPS mix through longer-term investments. These include the Solano wind project; a variety of small, in-state hydropower facilities, some owned by SMUD; in-state landfill biogas units; and solar PV through SMUD's various programs and investments.

Most utilities offer voluntary green pricing programs that allow customers to purchase renewable energy at a premium. In most cases, these programs make REC-only purchases on behalf of their customers. SMUD is the only utility we reviewed that made long-term investments for new renewable energy projects as a part of its voluntary green pricing program, called Greenergy. These long-term investments, which otherwise could have been used for SMUD's RPS program, contributed approximately another 2 percent of electricity sales.[2]

SMUD obtained 30 percent of its 2010 RPS mix through eight-year contracts. Most of these brought electricity into the state temporarily from existing small hydropower and biomass plants in Washington and Idaho.

2 By the end of 2010, SMUD's Greenergy program contributed 3.8 percent of its retail electricity sales. Approximately half of this came from REC-only purchases and half from long-term contracts for new renewable energy facilities.

Sources of SMUD's RPS Renewables, 2010



Union of Concerned Scientists • July 2012

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Looking Ahead to 33 Percent

The 33 percent RPS law requires each utility to procure 20 percent of its retail electricity sales from renewables by 2013, 25 percent by 2016, and 33 percent by 2020. Each utility must also make "reasonable progress" on renewable energy investments between those deadlines. If the state is to transition to a clean, safe, and sustainable electricity system, utilities must meet these standards in a way that prepares them to move well beyond the 33 percent RPS.

In 2010, SMUD's renewable energy portfolio was diverse, but its contracts were relatively short in length. Nearly 70 percent of SMUD's investments were for 12 years or less and 30 percent were for eight years or less. The utility will need to renew these contracts or sign new ones just to maintain its level of RPS renewables, let alone reach 33 percent. In addition, less than half of SMUD's investments for its 2010 RPS program were comprised of long-term commitments for new renewable energy facilities.

Since 2010, SMUD has more than doubled the generation capacity at its Solano Wind facility. The utility is also expanding the generating capacity of a local wastewater treatment plant, and expects to receive electricity from new solar PV projects through its feed-in tariff program. This additional electricity generation is expected to increase SMUD's RPS mix by another 6 percent of retail sales.

If the state is to transition to a clean, safe, and sustainable electricity system, utilities must meet these standards in a way that prepares them to move well beyond the 33 percent RPS.

Tracking Future Progress

SMUD's RPS Procurement Plan will provide details on the utility's strategy for reaching the 33 percent RPS by 2020. The utility's board of directors must approve this plan and make it available to the public. Any changes to this plan trigger a 10-day public notice that must be posted on the website of the California Energy Commission (CEC): *http://www.energy.ca.gov/portfolio/rps_pou_reports.html*. The CEC also maintains a database of contracts executed to meet the RPS, available on the same website. More information on SMUD's renewable energy programs is also available at *https://www.smud.org*.

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EXHIBIT 3

SMUD BOARD POLICY		
Category: **Strategic Direction**		Title: **Resource Planning**
		Policy Number: **SD-9**
Adoption Date:	**May 6, 2004**	Resolution No. **04-05-11**
Revision:	**May 6, 2004**	Resolution No. **04-05-12**
Revision:	**September 15, 2004**	Resolution No. **04-09-11**
Revision:	**May 17, 2007**	Resolution No. **07-05-10**
Revision:	**December 18, 2008**	Resolution No. **08-12-15**
Revision:	**November 19, 2009**	Resolution No. **09-11-08**
Revision:	**May 6, 2010**	Resolution No. **10-05-03**
Revision:	**May 19, 2011**	Resolution No. **11-05-05**
Revision:	**December 20, 2012**	Resolution No. **12-12-12**
Revision	**October 3, 2013**	Resolution No. **13-10-09**
Revision:	**September 17, 2015**	Resolution No. **15-09-11**
Revision:	**October 20, 2016**	Resolution No. **16-10-14**
Revision:	**October 18, 2018**	Resolution No. **18-10-11**

It is a core value of SMUD to provide its customer-owners with a sustainable power supply through the use of an integrated resource planning process. A sustainable power supply is defined as one that reduces SMUD's net long-term greenhouse gas (GHG) emissions to serve retail customer load to Net Zero by 2040. Net Zero is achieved through investments in vehicle and building electrification, energy efficiency, clean distributed resources, RPS eligible renewables, large hydro, and biogas. SMUD shall assure reliability of the system, minimize environmental impacts on land, habitat, water quality, and air quality, and maintain a competitive position relative to other California electricity providers.

To guide SMUD in its resource evaluation and investment, the Board sets the following interim goal:

Year	Net Greenhouse Gas Emissions (metric tons)
2020	2,318,000
2030	1,350,000
2040	Net Zero
2050	Net Zero

In keeping with this policy, SMUD shall also achieve the following:

a) SMUD's goal is to achieve Energy Efficiency equal to 15% of retail load over the next 10-year period. On an annual basis, SMUD will achieve energy efficiency savings of 1.5% of the average annual retail energy sales over the three-year period ending with the current year.

To do this, SMUD will acquire as much cost effective and reliable energy efficiency as feasible through programs that optimize value across all customers. SMUD shall support additional energy efficiency acquisition by targeting one percent (1%) of retail revenues for above market costs associated with education, market transformation, and programs for hard to reach or higher cost customer segments. The market value of energy efficiency will include environmental attributes, local capacity value and other customer costs reduced by an efficiency measure.

b) Provide dependable renewable resources to meet 33% of SMUD's retail sales by 2020, 44% by 2024, 52% by 2027, and 60% of its retail sales by 2030 and thereafter, excluding additional renewable energy acquired for certain customer programs.

c) In meeting GHG reduction goals, SMUD shall emphasize local and regional environmental benefits.

d) SMUD will continue exploring additional opportunities to accelerate and reduce carbon in our region beyond the GHG goals in this policy.

e) Promote cost effective, clean distributed generation through SMUD programs.

Monitoring Method: GM Report
Frequency: Annual

Letter 5-1 Response	Robert "Perl" Perlmutter, Amy J. Bricker Shute, Mihaly & Weinberger, LLP September 6, 2019

L5-1 **The DEIR fails to comply with CEQA.** The commenters write on behalf of the Solano County Airport Land Use Commission (ALUC). Their letter incorporates by reference their earlier February 8, 2019 letter regarding SMUD's NOP. The commenters state that the DEIR fails to comply with CEQA by failing to: 1) adequately describe the project or its environmental and regulatory setting; 2) adequately analyze the project's relationship to the Travis Air Force Base Land Use Compatibility Plan (LUCP); 3) adequately analyze the project's significant impacts; 4) adequately analyze the project's cumulative impacts; 5) provide for adequate mitigation of the project's significant impacts; or 6) evaluate a reasonable range of alternatives. The commenters reiterate their earlier position that ALUC disagrees with SMUD's assertion that SMUD is not required to obtain a consistency determination from ALUC for project approval. The commenters refer to a review of the DEIR by Dr. Jerry Johnson of the Regulus-Group, LLC, which is included with the commenters' letter.

SMUD has followed the requirements of CEQA for public agencies to consider the potentially significant adverse environmental effects of projects over which they have discretionary approval authority before taking action on those projects (Public Resources Code Section 2100 et seq.). In accordance with 14 CCR Section 15161, SMUD prepared a DEIR for the proposed project and determined that the DEIR has been sufficiently detailed so that the public and decisionmakers are properly informed and can conduct meaningful evaluation of the way project impacts were avoided, minimized, or mitigated.

As discussed in detail in the Master Response - *Land Use*, SMUD maintains that the Solano 4 Wind Project does not require Airport Land Use Commission (ALUC) approval for the following reasons: 1) Electrical generation/production facilities are exempt from a county's building and zoning ordinances under California Government Code Section 53091, subdivisions (d) and (e); 2) The Federal Aviation Administration (FAA) determinations of no significant hazard for the project preempt the ALUC regulations under the Travis Air Force Base (AFB) LUCP regarding air safety, including radar interference (Appendix G FAA Determination), and no aspects of the LUCP apply to the project other than those that are preempted; 3) The ALUC does not have authority to review individual projects, such as SMUD's Generation Project, under the State Aeronautics Act (SAA); and, 4) Even if one were somehow to conclude the ALUC regulations did apply to the project, SMUD, as a local agency, has the authority to overrule the ALUC determination pursuant to the SAA.

Please refer to specific responses below regarding the six points of purported CEQA inadequacy as identified in this Shute, Mihaly & Weinberger letter.

L5-2 Point 1. The DEIR does not adequately describe the project or the environmental setting (addressed in detail in responses L5-2 through L5-8). The commenters summarize case law regarding Project Description and Environmental Setting to address their argument that the DEIR does not adequately describe the project or the environmental setting per case law and CEQA.

> The majority of the comment describes general case law regarding the requirements for an adequate Project Description and Environmental Setting under CEQA and does not raise any specific concerns about the adequacy of the DEIR. Further, in accordance with 14 CCR Section 15161, SMUD prepared a DEIR for the proposed project and determined that the DEIR has been sufficiently detailed so that the public and decisionmakers are properly informed and can conduct meaningful evaluation of the way project impacts were avoided, minimized, or mitigated.

L5-3 The commenters reiterate earlier comments about turbine details and how they are described in the EIR. They state that the information is inadequate, in part, because the model and final location of the turbines will be selected at a later date.

> As discussed in Section 2.5.1 of the DEIR (*Wind Turbine Generators*), the model of the Wind Turbine Generators (WTGs) to be used for the Solano 4 Wind Project has not yet been selected due to project schedule, ability to meet SMUD's design criteria, product availability, and construction and operating costs. Various manufacturers offer WTGs in the size ranges proposed for the project. The sizes contemplated for the project reflect the current state-of-the-industry standards for land-based WTGs deployed throughout the United States and overseas. In keeping with these standards, individual WTGs would have a maximum height of approximately 492-591 feet (150-180 meters) and a maximum rotor diameter of approximately 446-492 feet (136-150 meters).
>
> The Solano 4 Wind Project would reduce the total number of WTGs within the project boundaries by replacing 23 WTGs with up to 22 new WTGs. The FAA's Determinations of No Hazard (DNHs) state that the Solano 4 wind turbines "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."
>
> Exhibit 2-2 of the DEIR shows the potential siting areas (footprints) where WTGs would be installed for the Solano 4 Wind Project. Although the final locations of the WTGs would be determined after SMUD completes the procurement process (as is common place in this type of project), this analysis assumes that the 136-meter or 150-meter rotor diameter WTGs would be located in or near the locations shown in Exhibit 2-2 of the DEIR. This level of design is typical for wind projects and may require slight adjustments after final engineering has been completed. The information provided in Section 2.5 of the DEIR (*Project Characteristics and Components*), includes a detailed

description of the project including description of the WTGs; towers; rotor blades; braking system; and safety, lighting, and grounding. Mitigation Measure 3.1-1a: *Design the Project to Avoid Aesthetic Impacts*, addresses reflectivity and requires the use of low-reflectivity finishes for WTGs and all other structures (e.g., meteorology towers). The project characteristics and components and detailed layout maps provide adequate information to analyze the impacts of the project.

Additionally, prior to the preparation of the DEIR, SMUD commissioned a supplemental individual obstruction evaluation and airspace analysis (Capitol Airspace Group 2018a) to identify obstacle clearance surfaces established by the FAA, and a supplemental radar cumulative impact study with proposed solutions and design elements to avoid or minimize potential safety impacts (Westslope 2018a). The Capitol Airspace Group supplemental study performed a series of analyses that are similar to the FAA aeronautical analysis and process. The supplemental study was commissioned to provide SMUD with a reasonable expectation of the likely outcome of the FAA review process. The supplemental Travis AFB radar system modeling study determined there would be a negligible impact over baseline on the associated radar systems for installation of twenty-two (22) 136-meter turbines following removal of the existing twenty-three (23) 47-meter turbines, and a net zero impact for installation of nineteen (19) 150-meter turbines following removal of the existing twenty-three (23) 47-meter turbines compared to the existing baseline conditions, and therefore the Solano 4 Wind Project would not contribute to a cumulative impact (Westslope 2018a). Both supplemental studies are included in Appendix A of this FEIR.

L5-4 The commenters state that the FAA reviewed 19 proposed turbines although the DEIR refers to an FAA review of 22.

As discussed in Section 2.5 of the DEIR (*Project Characteristics and Components*), SMUD proposes to construct **up to** 22 new WTGs; up to 10 in Solano 4 East and up to 12 in Solano 4 West to meet the goal of generating 91 MW of electrical capacity at the point of interconnection with the grid managed by the California Independent System Operator (CAISO). SMUD would comply with the FAA and any changes to construction or alteration, including but not limited to changes in heights, which requires separate notice to the FAA. SMUD would apply to the FAA for any turbine locations that do not already have an FAA determination. The Westslope supplemental radar system modeling study determined there would be a negligible impact over baseline to the associated radar systems for installation of 22 turbines following removal of the existing 23 turbines, and a net zero impact for installation of 19 turbines following removal of the existing 23 turbines compared to the existing baseline conditions, and therefore the Solano 4 Wind Project would not contribute to a cumulative impact (Westslope 2018a). The scope of a DEIR's analysis is not limited by the number

of turbines analyzed in a FAA determination, but properly reflects the different ways the project could ultimately be designed and built and provides a conservative analysis by analyzing the environmental impacts of the largest possible project footprint, assumed to be the most impactful configuration. The FAA reviewed 19 turbines for the 150-meter WTG configuration and issued Determination of No Hazard letters dated February 1, 2019 for all turbines. SMUD submitted 19 proposed WTGs for FAA review based on the larger 150-meter rotor diameter WTGs since these turbines would be the tallest of the WTGs being considered for the project and the worst-case scenario for height. A sample DNH was included in Appendix G of the DEIR. Each turbine received the same determination from the FAA. Each of the 19 DNHs is included in Appendix B of this FEIR. SMUD would obtain FAA determinations for all final turbine locations that have either changed from the locations originally proposed or those that changed due to the design ultimately chosen. The ultimate number of turbines installed would not exceed 22 and any additional WTGs beyond the 19 the FAA already reviewed would be submitted to the FAA for review. There is no reason to speculate that any new or revised submittals would result in a different determination by the FAA for any specific WTG.

L5-5 The commenters state that the DEIR includes only one of the FAA determinations.

The DEIR states the FAA "conducted an independent evaluation of the Solano 4 Wind Project and determined there would be no significant hazard to air traffic control operations" (page 3.7-22). The FAA reviewed 19 turbines for the 150-meter WTG configuration and provided DNH letters dated February 1, 2019 for each of the turbines. As stated above in response to comment L 5-4, a sample DNH findings was included in Appendix G of the DEIR. Because the DNHs are virtually identical, it was unnecessary to include all appendices to the DEIR. For additional clarification, all 19 DNHs received from the FAA are included in Appendix B of this FEIR. The DNHs are also available to the public on the FAA website, https://oeaaa.faa.gov/oeaaa/external/searchAction.jsp.

L5-6 The commenters allege that changing megawatt output numbers in the DEIR (91 MW versus 92 MW) may be indicative of inadequate alternatives analysis.

There is no evidence to suggest that there would be a different determination in the alternatives analysis between 91 MW versus 92 MW. The difference in 91 MW versus 92 MW would not result in a different number of turbines than analyzed in the DEIR and would not result in taller or shorter turbines than those analyzed in the DEIR. Operations would remain within the parameters described and evaluated in the DEIR. Therefore, such differences are immaterial to the environmental analysis. The DEIR is sufficiently detailed to inform the public and decisionmakers and enable them to conduct a meaningful evaluation of the way project impacts were avoided, minimized, or mitigated. The adjustment of the MW output of the project did not result in a change in the

severity of any impacts disclosed in the DEIR and was not at a magnitude sufficient to warrant changing the range of alternatives; nor did it change any of the impacts conclusions reached in the DEIR. Slight project adjustments are inherent in any project as they move through refinements and design.

L5-7 The commenters state that they interpret the language in the DEIR to indicate that there could be a possible unspecified future expansion of the project (e.g., larger turbines) without any analysis of potential impacts and provide language from the DEIR they believe could be interpreted this way.

SMUD does not have any plans for replacement of Solano Phases 2 and 3 or for acquisition or development of additional property for wind generation at this time. Any wind energy development or repower projects SMUD may decide to propose in the future in the Solano Wind Resource Area are not part of the project proposed and analyzed in the DEIR and would need to go through a new, separate CEQA review process at the time proposed. It is unknown at this time what future industry technology will entail with regards to turbine design. The DEIR does not contend that any of these future changes are covered under this CEQA review. Any decisions about the future use of the site at the end of the project's operational life (typically about 30 years) would be purely speculative as it is impossible to know what future technology and energy needs will be at that time. CEQA does not require the lead agency to engage in speculation (*Center for Biological Diversity v. County of San Bernardino* (2016) 247 Cal.App.4th 326, 348-350 [rejecting similar argument that project description was unstable and misleading simply because it did not analyze operation of groundwater pumping project beyond the fifty-year term of the proposed project].) No revisions to the DEIR are necessary.

L5-8 The commenters state there is a lack of environmental setting information, such as radar equipment and aircraft types, and regulatory setting.

The *Environmental Setting* is described in each subject area chapter of the DEIR as pertinent to the analysis of the Solano 4 Wind Project. For example, the DEIR (page 3.1-37) describes the Aircraft Detection Lighting System (ADLS) as a radar-based obstacle avoidance system that activates obstruction lighting and audio signals only when an aircraft is close to an obstruction on which an ADLS unit is mounted, such as a wind turbine. According to the FAA report, the proposed WTGs would be within the line of sight of the Stockton CA (SCK) ASR-11, Travis (SUU) Digital Airport Surveillance Radar (DASR), Mill Valley (QMV) ARSR-4, and McClellan (MCC) ASR-9 radar facilities (DEIR page 3.7-14). SMUD commissioned an individual obstruction evaluation and airspace analysis (Capitol Airspace Group 2018a) to identify obstacle clearance surfaces established by the FAA, and a radar cumulative impact study with proposed mitigation solutions (Westslope 2018a). The Capitol Airspace Group study performed a series of analyses that are similar to the FAA aeronautical

analysis and process and was prepared to give SMUD a reasonable expectation of the FAA outcomes. The Travis AFB radar system modeling study determined there would be a negligible impact over baseline to the associated radar systems for installation of twenty-two (22) 136M turbines following removal of the existing 23, and a net zero impact for installation of nineteen (19) 150M turbines following removal of the existing 23 compared to the existing baseline conditions, and therefore the Solano 4 Wind Project would not contribute to a cumulative impact (Westslope 2018a). Both studies are included in Appendix A of this FEIR. Results of these supplemental cumulative impact studies conducted by Westslope Consulting and Capitol Airspace are further discussed in the Letter L5a-1 Response to the Shute, Mihaly, & Weinberger LLP Exhibit 1, memorandum from Dr. Jerry Johnson. Additionally, at the request of SMUD, the FAA determined that the Solano 4 Wind Project "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." The DNHs state that the aeronautical studies "considered and analyzed the impact on existing and proposed arrival, departure, and en route procedures for aircraft operating under both visual flight rules and instrument flight rules; the impact on all existing and planned public-use airports, military airports and aeronautical facilities; and the cumulative impact" resulting from the Solano 4 Wind Project when combined with the impact of other existing structures (see Appendix B of this FEIR).

The specific information on aircraft types requested by the commenter is not relevant to the analysis presented in the DEIR. Any risk to aircraft resulting from the project has been addressed through FAA regulations, which take into account any aircraft that may be operating in the nearby airspace both now and in the future. No revisions to the DEIR are necessary.

The *Regulatory Setting* is described in each subject area chapter of the DEIR as pertinent to the analysis of the Solano 4 Wind Project.

The *Regulatory Setting* section 3.7.1 in Chapter 3.7, *Hazards and Hazardous Materials* of the DEIR describes the role of the State Aeronautics Act, ALUC, and LUCP, even though the Solano 4 Wind Project does not require ALUC approval.

The LUCP has only one element in it that would apply to the Solano 4 Wind Project, the line of site standard. Please refer to the Master Response in this FEIR for an explanation of why any possible inconsistency with the LUCP does not equate to a significant adverse change in the physical environment under CEQA.

SMUD believes the DEIR contains sufficient information to inform the reader and that the FAA has sufficient information at its disposal to make a Determination of Hazard or No Hazard. Therefore, in summary, the information

requested by the commenters is either included, not relevant, or unnecessary to the hazard determination and CEQA analysis. No revisions to language in the DEIR are necessary.

L5-9 Point 2. The commenters state that the DEIR does not properly analyze the project's relationship to the Travis AFB LUCP.

Please refer to the Master Response Land Use and response to comment L5-1 above for an explanation of why the project is exempt from ALUC review and why any possible inconsistency with the LUCP does not equate to a significant adverse change in the physical environment under CEQA. Also, Chapter 3.7 of the DEIR analyzes safety hazard impacts to air traffic (page 3.7-21 to 3.7-23). No revisions to the language in the DEIR are necessary.

L5-10 The commenters disagree with the DEIR's statement that the FAA's Determination of No Hazard Finding (NHF or DNH) for the project preempts the ALUC's land use regulations regarding radar system interference. The commenters state that the FAA does not have authority over local land use decisions as evidenced by FAA Order JO 7400.2M § 5-1-2a, case law cited by the commenters, and the California Department of Transportation regarding implementation of the SAA. The commenters assert that there is no federal preemption of ALUC's review of the project.

This comment is duplicative of other comments. Please refer to the Downey Brand letter dated April 26, 2019 in response to Solano County ALUC comments on SMUD's Notice of Preparation for the Solano 4 Wind Project (included in Appendix C of this Final EIR). Also see the Master Response in this FEIR and response to comment L5-1 above for an explanation of why the project is exempt from ALUC review. *Please also refer to FEIR Appendix B (FAA Determinations).*

While the commenter may disagree with the DEIR's conclusions regarding jurisdiction, the DEIR's analysis addresses all of the possible physical environmental impacts associated with the project, including the ALUC's land use plan and possible hazards associated with wind turbines at this location. Based on substantial evidence—including the FAA DNHs, consultation with Travis AFB, and consultations with SMUD's own aeronautic safety experts, the DEIR concluded that the project's impacts in this regard will remain less than significant. Consequently, no revisions to the language in the DEIR are necessary.

L5-11 The LUCP provisions apply to SMUD**.** The commenters contest the DEIR's statement that LUCP provisions do not apply to SMUD WTG facilities under Section 53091 of the California Code. The commenters state that per the law, SMUD is among the local agencies that are subject to ALUC review. Per the commenters, the statutory exemption from LUCP compliance applies to counties or cities, and ALUC is neither.

This comment is duplicative of other comments. Please refer to Master Response Land Use and responses to comments L5-1 and L5-10, above, for an explanation of the multiple reasons why the project is exempt from ALUC review. SMUD is not solely relying on Section 53091 for exemption. No revisions to the language in the DEIR are necessary.

L5-12 SMUD does not have the authority to overrule ALUC, nor would such authority obviate the need for CEQA review. The commenters dispute the DEIR statements that SMUD as a local agency can overrule the ALUC determination, and that it need not analyze or mitigate any potential land use inconsistency with the LUCP. The commenters state that the override powers granted to cities and counties based on their power to adopt and amend general plans under the Public Utilities Code do not apply to SMUD, because it is neither a city nor a county. The commenters note that even if SMUD could override ALUC, the DEIR is mistaken in concluding that the override would happen. The commenters state that ALUC would still perform a consistency review and the local agency could approve the override only upon a two-thirds vote and making certain findings. The commenters believe that the DEIR portrays SMUD as not caring about local considerations. They ask that the DEIR be revised to include an analysis of the project's land use impacts and all feasible mitigation measures.

The comment is duplicative with other comments. Please refer to the Master Response *Land Use* and responses to comments L5-1 and L5-10 above for an explanation of why the project is exempt from ALUC review. The allegation that the DEIR fails to adequately analyze the environmental impacts of the project related to aerial safety is addressed in the Responses L5-8, L5-13, and L5-14. Further, no matter the procedural steps associated with approving the project, the DEIR evaluates both aeronautic safety, the ALUC's LUCP, and related land use issues, finding that the project as proposed would not have a significant physical impact in these areas. No revisions to the language in the DEIR are necessary.

L5-13 Points 3 and 5. The DEIR fails to adequately analyze or mitigate the project's significant impacts. The commenters point out that the DEIR states that there would be a "potentially significant" impact if "placement of the WTGs intrude into navigable airspace, thereby increasing the risk of aircraft collision, or causing interference with radar signals used by air traffic control."

Impact 3.7-3: *Safety Hazard to Air Traffic* of the DEIR (page 3.7-21) identifies this impact as "potentially significant" before mitigation. The DEIR analysis concludes that there would be a **less than significant** impact with the implementation of Mitigation Measure 3.7-3 that requires that the WTGs be marked according to FAA regulations and made visible to any air traffic for avoidance. Therefore, a clear final impact determination is stated.

Furthermore, SMUD commissioned a supplemental individual obstruction evaluation and airspace analysis (Capitol Airspace Group 2018a) to identify

obstacle clearance surfaces established by the FAA, and a supplemental radar cumulative impact study with design elements to avoid or minimize potential safety impacts (Westslope 2018a). The Capitol Airspace Group supplemental study performed a series of analyses that are similar to the FAA aeronautical analysis and process. The supplemental study was commissioned to provide SMUD with a reasonable expectation of the likely outcome of the FAA review process. The supplemental radar cumulative impact modeling study determined there would be a negligible impact over baseline to the associated Travis AFB radar systems resulting from installation of twenty-two (22) 136M turbines following removal of the existing 23 WTGs, and a net zero impact for installation of nineteen (19) 150M turbines following removal of the existing 23 WTGs compared to the existing baseline conditions, and therefore the Solano 4 Wind Project would not contribute to a cumulative impact (Westslope 2018a). Both supplemental studies are included in Appendix A of this FEIR. Pursuant to applications filed by SMUD, the FAA issued DNHs for each of the proposed turbines for the project; the FAA also confirmed that the DNHs encompass not only the Visual Flight Rules (VFR) routes but also potential impacts on radar. No revisions to the language in the DEIR are necessary.

L5-14 The DEIR analysis of the potentially significant impacts is inadequate. The commenters state that after admitting that the project would increase the risk of aircraft collisions or radar signal interference, the DEIR dismisses impacts.

The DEIR does not “admit” that the project would increase the risk of aircraft collision and cause interference with radar signals. Rather, the DEIR states there is “potential,” which is then further analyzed and discussed. Through SMUD’s thorough analysis of potential risks, it was determined that there is a less-than-significant impact.

Results of the supplemental cumulative impact studies conducted by Westslope Consulting (2018a) and Capitol Airspace (2018a), and mitigation efforts are discussed in the Letter L5a-1 Response to the Shute, Mihaly, & Weinberger LLP Exhibit 1, memorandum from Dr. Jerry Johnson. Westslope Consulting concluded there would be a negligible impact over baseline to the associated radar systems for installation of twenty-two (22) 136M turbines following removal of the existing 23 WTGs, and a net zero impact for installation of nineteen (19) 150M turbines following removal of the existing 23 WTGs compared to the existing baseline conditions, and therefore the Solano 4 Wind Project would not contribute to a cumulative impact.

Additionally, the FAA determined that the Solano 4 Wind Project “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.” The DNHs state that the aeronautical studies “considered and analyzed the impact on existing and proposed arrival,

departure, and en route procedures for aircraft operating under both visual flight rules and instrument flight rules; the impact on all existing and planned public-use airports, military airports and aeronautical facilities; and the cumulative impact" resulting from the Solano 4 Wind Project when combined with the impacts of other existing structures (see Appendix B - FAA Determinations).

Also, please see Master Response *Safety Concerns Related to Project Siting*.

L5-15 CEQA Requirements for EIRs. The commenters cite CEQA guidelines for an EIR and applicable case law. The commenters state "the EIR must explain the nature and extent of the increased risks for aircraft collision and radar interference in a manner calculated for the public to understand" and set forth standards of significance.

The CEQA guidelines for EIRs and case law are noted. SMUD has followed the requirements of CEQA for public agencies to consider the potentially significant adverse environmental effects of projects over which they have discretionary approval authority before taking action on those projects (Public Resources Code Section 2100 et seq.). In accordance with 14 CCR Section 15161, SMUD prepared a DEIR for the proposed project and determined that the DEIR has been sufficiently detailed so that the public and decisionmakers are properly informed and can conduct meaningful evaluation of the way project impacts were avoided, minimized, or mitigated. As discussed above, SMUD adequately considered the hazards and air safety impacts of the WTGs.

Please also see responses to comments L5-13 and L5-14 above. No revisions to the language in the EIR are necessary.

L5-16 The DEIR relies entirely on the FAA's Determination of No Hazard (DNH). The commenters contend that the DEIR relies entirely on the FAA's NHD (DNH) to improperly dismiss air safety concerns raised by ALUC, and that the NHD (DNH) did not "dismiss" ALUC's concerns. The commenters argue that the NHD (DNH) "does not purport to satisfy anything other than the FAA's limited criteria" and requires the applicant to comply with "any law, ordinance, or regulation of any Federal, State, or local government body." The commenters state that the NHD (DNH) does not include a review of the entire proposed project (22 vs. 19 WTGs)

Please see responses L5-4 and L5-8 above and Master Response *Safety Concerns Related to Project Siting*. SMUD followed all applicable laws and rules in analyzing the project's potential impact on the environment, and relied on the FAA's DNH, consultations with Travis AFB, and the evaluation and conclusions of its own experts. Contrary to the comment, while DNHs were secured for 19 WTGs, the DEIR and appended studies evaluated up to 22 WTGs. Westslope Consulting evaluated potential sites for the twenty-two (22) 136M turbine configuration and concluded there would be a negligible impact over baseline to the associated radar systems for installation of twenty-two (22) 136M turbines following removal of the existing 23 WTGs and were all eligible

for DNH. The FAA reviewed 19 turbines for the 150-meter WTG configuration and issued DNH letters dated February 1, 2019 for all 19 turbines. SMUD submitted 19 proposed WTGs for FAA review based on the larger 150-meter rotor diameter WTGs since these turbines would be the tallest of the WTGs being considered for the project and the worst-case scenario for height. Each turbine received the same determination from the FAA. Each of the 19 DNHs is included in Appendix B of this FEIR. SMUD would obtain FAA determinations for all final turbine locations that have either changed from the locations originally proposed or those that changed due to the design ultimately chosen. The ultimate number of turbines installed would not exceed 22 and any additional WTGs beyond the 19 the FAA already reviewed would be submitted to the FAA for review. There is no reason to speculate that any new or revised submittals would result in a different determination by the FAA for any specific WTG. DNHs were not necessary for all 22 WTGs, particularly given the consistent conclusions of the issued DNHs and other substantial evidence. No changes to the language in the DEIR are necessary.

L5-17 CEQA requirements and regulatory standards. The commenters discuss CEQA requirements and case law regarding EIRs improperly relying on compliance with regulatory standards to avoid doing impact analysis (e.g., Californians for Alternatives to Toxics v. Department of Food & Agriculture (2005) 136 Cal.App.4th 1).

As stated in response to comment L5-15 above, SMUD is familiar with all relevant CEQA requirements and applicable case law.

Please see response L5-8 above and Master Response *Safety Concerns Related to Project Siting*. Here, unlike the circumstances in *Californians for Alternatives to Toxics*, SMUD did not just rely on compliance with regulatory standards to determine a less than significant impact under CEQA. Instead, SMUD relied both on regulatory standards as well as site-specific evaluation and analysis, which together constitute substantial evidence of a less than significant impact related to aerial hazards. Such analysis and conclusions are entirely appropriate. (See *Oakland Heritage Alliance v. City of Oakland* (2011) 195 Cal.App.4th 884, 904 (city compliance with building code and other regulatory provisions in conjunction with site-specific geotechnical investigation provided substantial evidence that seismic impacts would remain less than significant)). No revisions to the language in the DEIR are necessary.

L5-18 Report by Dr. Johnson of the Regulus Group and air safety impacts. The commenters reference the Regulus Group report and contend the DEIR analysis is inadequate and would need to assess "(1) the increase in ATC MVA for the area of WTGs; (2) objective metrics for radar interference; (3) clutter and dual tracks; and (4) workload for operator engagement with aircraft because of clutter." They further state that the DEIR "fails to provide substantial evidence to support its determination that the project will result in insignificant air safety impacts."

Please see the results of the supplemental cumulative impact studies conducted by Westslope Consulting (2018a) and Capitol Airspace (2018a) that are included in Appendix A of this FEIR, and the Westslope letter dated March 30, 2021 responding to the memorandum from Dr. Jerry Johnson included in Appendix C of this FEIR. Also, see responses from Geoff Blackman in the Transcript from the ALUC hearing included in Appendix A. The analysis provided is thorough and adequate. These findings are further supported by response to comments in letter L5a. No further revisions to the language in the DEIR are necessary.

L5-19 *Mitigation Measures and Feasible Alternatives. The commenters state that "once the DEIR adequately evaluates the project's significant air safety impacts, it must evaluate all potentially feasible mitigation measures and feasible alternatives to lessen or avoid such impacts." The commenters note that Mitigation Measure 3.7-3 addresses hazards to aviation only during construction, and not operation. The commenters also state that the DEIR does not address that the WTGs can result in radar interference, even in the daytime. The commenters state that the DEIR must consider all mitigation solutions.*

Commenters are incorrect. The DEIR has been sufficiently detailed so that the public and decisionmakers are properly informed and can conduct meaningful evaluation of the way project impacts were avoided, minimized, or mitigated. The allegation that the DEIR fails to adequately analyze the environmental impacts of the project related to aerial safety is addressed in responses L5-8, L5-13, and L5-14 above. Results of the supplemental cumulative impact studies conducted by Westslope Consulting (2018a) are described in the Letter L5a-1 Response, and confirmed by the FAA DNHs for the Solano 4 Wind Project that the project "would have no substantial adverse effect on the safe and efficient utilization of the navigable airspace by aircraft" and "would not be a hazard to air navigation" provided the wind turbines are marked/lighted in accordance with FAA Advisory Circular 70/7460-1 L Change 2, Obstruction Marking and Lighting. Mitigation Measure 3.7-3 *Mark and light wind turbine generators during construction* requires SMUD "To ensure proper conspicuity of turbines at night during construction, all WTGs shall be lit with temporary lighting once they reach a height of 200 feet or greater until the permanent lighting configuration is turned on." Regarding operation, as a condition of the FAA's DNH, safety lighting would be incorporated into the design of the WTGs using an aircraft detection system; and compliance with this FAA regulation obviates the need for additional mitigation. Please also refer to FEIR Appendix B (FAA DNHs) and Master Response *Safety Concerns Related to Project Siting.* No revisions to the mitigation measures as presented in the DEIR are necessary.

L5-20 The DEIR fails to consider Wind Turbine Radar Interference Mitigation (WTRIM). The commenters state the DEIR fails to consider the WTRIM pilot mitigation program taking place at Travis AFB.

> Under a Memorandum of Understanding signed in 2014 and building off the successful Interagency Field Test and Evaluation (IFT&E) of Wind Turbine-Radar Interference Mitigation Technologies, federal agencies established the WTRIM Working Group to address these conflicts. SMUD has closely followed WTRIM, provided data at their request, and attended WTRIM meetings. WTRIM is planning continued infill radar testing at Travis AFB (pers. comm. with Michael Lesmerises and Arthur G. Avedisian, C Speed[1]); however, after testing the system will need to be certified with the FAA, go through procurement, and then be installed and implemented. Certification requirements are being developed but use of infill radar is expected to require many additional years to approve and install. The U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy (OEERE) recommends early coordination with the FAA, National Oceanic and Atmospheric Administration, Department of Homeland Security, and U.S. Department of Defense (DOD) during the siting process to help prevent an interference issue long before a wind plant is built. As described in the Westslope letter response to the Shute, Mihaly, & Weinberger LLP Exhibit 1, memorandum from Dr. Jerry Johnson, SMUD applied to the FAA and DNHs were issued by the FAA for the Solano 4 Wind Project originally on February 1, 2019, and after further DOD and FAA review, were recently extended on January 28, 2021. The extension process resulted in the formation of a Mitigation Response Team (MRT) with Travis AFB as required by the DOD Military Aviation and Installation Assurance Siting Clearinghouse (the "DOD Siting Clearinghouse") mission compatibility evaluation process as documented in Part 211 of Title 32 of the Code of Federal Regulations (Military Aviation and Installation Assurance Siting Clearinghouse, accessed 2021). The DOD Siting Clearinghouse was established under direction of the United States Congress per the National Defense Authorization Act for Fiscal Year 2011. The result of the MRT review was a conclusion by the 60th Air Mobility Wing of "[a]s proposed, Solano 4 should have minimal negative impact on Travis Operations" and a conclusion by the DOD Siting Clearinghouse that Solano 4 Wind Project "will not present an adverse impact to military operations." (Simmons, 2021; Sample, 2021). Additionally, after modeling the potential impacts the FAA issued DNHs stating the Solano 4 Wind Project turbines "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." Travis AFB has served and

[1] John Cutting and Matthew Seitzler of SMUD had personal communication with Michael Lesmerises and Arthur G. Avedisian, C Speed on February 12, 2021. C Speed, LLC is a high-end supplier of custom software, electronics, and contract engineering solutions specializing in Embedded & Application Software, High Performance Analog & Digital Systems, and Signal Processing for industrial, military, medical, test & measurement, and other applications. They are supporting the infill radar effort for the U.S. Air Force.

continues to serve as an excellent source of information for the United States government and the wind industry in understanding the effects that multiple wind projects can have on a DASR and the display system used by the air traffic controllers, the Standard Terminal Automation System (STARS), at the Travis AFB Radar Approach Control (RAPCON) facility. Travis AFB and the wind projects in the Collinsville-Montezuma Hills Wind Resource Area (WRA) area also served as an excellent source of information in determining how to manage or lessen the effects of wind turbines for a DASR and STARS air traffic control systems configuration. Part of this work was conducted under Cooperative Research and Development Agreement (CRADA) No. 10-002 in collaboration with Travis AFB, Westslope Consulting, LLC (Westslope), and three wind project developers including SMUD (Air Mobility Command, 2010; United States Transportation Command Cooperative Research and Development Agreement, 2010). SMUD will continue to closely follow the progress of the WTRIM.

Please also see the results of initial supplemental cumulative impact studies conducted by Westslope Consulting (2018a) and Capitol Airspace (2018a) that are discussed in the Letter L5a-1 Response to the Shute, Mihaly, & Weinberger LLP Exhibit 1, memorandum from Dr. Jerry Johnson (specifically response to L5A-6 comment). Also, please see responses L5-8, L5-13, and L5-14 above and Master Response *Safety Concerns Related to Project Siting*. No changes to the language in the DEIR are necessary.

L5-21 Construction Impacts and Mitigation. The commenters state that it is impossible to know whether Measure 3.7-3 would actually reduce impacts to a less-than-significant level because the DEIR fails to describe the nature and extent of the project's construction impacts or how the impact would be lessened with implementation of the measure. The commenters cite case law.

Please see responses L5-8, L5-13, and L5-14 above and Master Response *Safety Concerns Related to Project Siting*.

Also, please see the results of the supplemental cumulative impact studies conducted by Westslope Consulting (2018a) and Capitol Airspace (2018a) that are included in Appendix A of this FEIR and discussed in the Letter L5a-1 Response to the Shute, Mihaly, & Weinberger LLP Exhibit 1, memorandum from Dr. Jerry Johnson (specifically response to L5A-6 comment). The studies and analysis provided are adequate and the DEIR's conclusions are backed by substantial evidence. Moreover, the case law cited in the comment is distinguishable, as here SMUD undertook an analysis of aeronautic safety issues, which are not quantifiable as was the case with regard to the energy impacts addressed in *Ukiah Citizens for Safety First v. City of Ukiah* (2016) 248 Cal.App.4th 256, 264. Measure 3.7-3 is based on requirements from the FAA that wind turbines are marked/lighted in accordance with 'FAA Advisory

Circular 70/7460-1L Change 2, Obstruction Marking and Lighting'. This is a common and effective mitigation measure for addressing possible collision hazards. The discussion adequately describes how the impact would be lessened with implementation of the measure and states, "To ensure proper conspicuity of turbines at night during construction, all WTGs shall be lit with temporary lighting once they reach a height of 200 feet or greater until the permanent lighting configuration is turned on. As the height of the structure continues to increase, the temporary lighting shall be relocated to the uppermost part of the structure." To SMUD's knowledge there have been no reported incidents of aerial collisions in this region. The project proposes to replace existing turbines, and the baseline for the project includes a fully developed wind resource area. No revisions to the language in the DEIR are necessary.

L5-22 Point 4. The DEIR fails to adequately analyze or mitigate the project's significant cumulative impacts. The commenters discuss CEQA guidelines and cite case law regarding analysis of cumulative impacts. The commenters refer to the report by Dr. Johnson. The commenters contend the DEIR does not analyze cumulative impacts in a manner required by CEQA, but relies entirely on the FAA's NHD (DNH).

The FAA conducted modeling of the issues under its jurisdiction, including cumulative impacts, and the DNHs it issued for the project turbines each conclude that the "*cumulative impact of the proposed structures*, when combined with other proposed and existing structures, is not considered to be significant" (emphasis added).

Moreover, SMUD hired Westslope Consulting, LLS to conduct a cumulative study for the Solano 4 Wind Project (Westslope 2018a). The study is titled SMUD Solano 4 Cumulative Impact Study and Mitigation Solution Results for 2018 Vestas V136 and V150 Wind Turbine Layouts dated September 6, 2018 and can be found in Appendix A of this FEIR. The cumulative study includes the following conclusions:

- Solano 4 East and West projects will replace 23 existing V47 wind turbines that are currently interfering with the Travis AFB DASR with either 22 136-meter WTGs or 19 150-meter WTGs.

- The 150-meter wind turbines for the Solano 4 East will negate the Pd drop over the Wind Resource Area as a result of the Solano 4 West 150-meter wind turbines. There would be no material difference to Travis AFB radar operations compared to the existing baseline conditions and therefore the Solano 4 Wind Project would not contribute to a cumulative impact.

- False targets are not expected to be significant and should be manageable for Solano 4 Wind Project turbines.

- No impacts to the secondary radar co-located with Travis AFB DASR.

SMUD made every effort to find a wind project configuration for the Solano 4 Wind Project to avoid or minimize the effects of the project on the DASR and on the air traffic controllers' displays in STARS. This effort and the findings of those efforts are described in more detail in the Letter L5a-1 Response to the Shute, Mihaly, & Weinberger LLP Exhibit 1, memorandum from Dr. Jerry Johnson.

Also, please see response L5-8 above and Master Response *Safety Concerns Related to Project Siting*. No revisions to the language in the DEIR are necessary.

L5-23 Point 5. The DEIR fails to adequately evaluate alternatives to lessen or avoid the project's significant impacts. The commenters discuss CEQA guidelines for alternatives analysis and cite case law.

SMUD needs new renewable and carbon-free resources to meet California's mandate for renewable procurement (60% by 2030)[2] and to meet its Board directed goals. SMUD's Integrated Resource Plan (IRP), adopted by its Board in 2018, guides decisions on future resource developments, and lays out a pathway to achieve a Net Zero greenhouse gas (GHG) emissions goal by 2040 through investment in electrification while significantly expanding renewable and carbon-free resources in its portfolio.[3] In July 2020, SMUD's Board declared a climate emergency and adopted a resolution calling for SMUD to take significant and consequential actions to eliminate its greenhouse gas emissions by 2030, and directed staff to develop a plan to achieve this goal. SMUD's 2030 Zero Carbon Plan (2030 Plan)[4] has been approved by the Board and calls for the addition of up to 2,300 MW of new renewables and 1,100 MW of batteries by 2030 – more than double the amount SMUD was planning for in its 2018 IRP. The 2030 Plan calls for maximizing new cost-effective utility-scale renewables within our service territory (up to 1,500 MW utility solar), but also requires SMUD to add additional resources that it does not have locally, such as wind and geothermal. Resource decisions will be made based on a thorough analysis of market ready and available carbon-free resource options, while evaluating financial impacts, resource type and generation profile, reliability, and sustainability. SMUD's IRP process has resulted in a diverse portfolio of renewable resources, which today include small hydro, biomass and biogas, wind, solar, and geothermal.

[2] Sen. Bill No. 100, approved by Governor, Sept. 10, 2018.
[3] https://www.smud.org/-/media/Documents/Corporate/Environmental-Leadership/Integrated-Resource-Plan.ashx.
[4] https://www.smud.org/-/media/Documents/Corporate/Environmental-Leadership/ZeroCarbon/2030-Zero-Carbon-Plan-Technical-Report.ashx.

Resource diversity is coveted in resource planning, as it results in varying generation profiles, costs, and avoiding over investing in one generation type that may result in diminishing returns as we have seen with solar development in California. Wind generation, such as that produced in the Solano wind area, is beneficial from a resource diversity perspective as its generation profile can provide more output during peak hours than solar generation, and this means it has greater value in meeting energy demand. SMUD currently owns or contracts for about 280 MW of wind resources in the Solano wind area, which is just a fraction of the total installed capacity at this high-quality wind site. With very few high-quality wind sites left undeveloped in California, the Solano area provides a valuable wind resource that is well positioned to help the State and SMUD achieve their environmental goals.

As only few high-quality wind sites remain undeveloped in California, future wind options beyond the Solano site are likely out of state. Out of state resources are more expensive and require costly transmission for delivery to SMUD's load. Other renewable technologies (such as biomass, geothermal, Biomethane/Biogas, geothermal, ocean wave power, tidal power, etc.) have either limited in-state supply or have not been fully developed technologically for market or are extremely expensive. Further, RPS guidelines must be adhered to, which limits the resource pool further. For example, RPS guidelines are prohibitive on out-of-state biomethane use for meeting renewable mandates, limiting future consideration of this resource.

Through our IRP process, we have carefully considered the variety of resource options and have decided that developing additional wind generation at Solano and utilizing land already owned by SMUD will serve both RPS and SMUD's GHG reduction goals in a reliable, environmentally sustainable, and cost-effective manner. In order to meet the State's aggressive RPS and our aggressive GHG reduction goals, we will need to rely on the myriad of proven and available carbon-free resources. In addition, given the current level of technology for—and uncertainty around—evolving alternatives, this project is considered a critical component of SMUD's strategy. If anything, unproven alternatives will also be necessary to meet SMUD's ambitious goals even with the Solano 4 Wind Project.

Also, the need for additional alternatives to address aerial safety are not necessary since there is no significant effect in light of the Westslope (2018a) radar cumulative impact modeling study that determined there would be a negligible impact over baseline to the associated Travis AFB radar systems resulting from installation of twenty-two (22) 136M turbines following removal of the existing 23 WTGs, and a net zero impact for installation of nineteen (19) 150M turbines following removal of the existing 23 WTGs compared to the existing baseline conditions, and therefore the Solano 4 Wind Project would not contribute to a cumulative impact.

Please refer to Letter L5a-1 Response to the Shute, Mihaly, & Weinberger LLP Exhibit 1, memorandum from Dr. Jerry Johnson and Appendix B of this FEIR (FAA DNHs). No revisions to the language in the DEIR are necessary.

L5-24 DEIR only offers one project alternative. The commenters contend that the DEIR only offers one project alternative that may increase radar interference.

Please see responses to L5-23 and L5-25.

L5-25 CEQA guidelines and case law regarding alternatives. The commenters discuss CEQA guidelines and case law regarding alternatives, and that the DEIR presents only one alternative that would increase the project's significant impacts. The commenters suggest that the DEIR does not offer a reasonable range of alternatives.

CEQA guidelines and case law are noted. CEQA does not require an EIR to consider every conceivable project alternative and the selection of alternatives is subject only to a rule of reason. (Guidelines, § 15126.6(a), (f).) To satisfy CEQA, the EIR's range of alternatives must examine in detail only those that would feasibly attain most of the basic project objectives while avoiding or substantially lessening any of a project's significant effects. (Guidelines, § 15126.6(a), (f).) In particular, an EIR need not include alternatives that will not implement fundamental project objectives or would change the basic nature of the project. (Guidelines, § 15126.6(a), (c); *In re Bay-Delta Programmatic Environmental Impact Report Coordinated Proceedings* (2008) 43 Cal.4th 1143, 1165 [finding evaluating reduced-export alternative not required as it conflicted with project's objectives of improving water supply reliability and providing water for beneficial uses].) Further, an EIR need not address proffered alternatives that do not provide distinct environmental advantages over the project or is already within the range of alternatives addressed in the EIR. (Guidelines, § 15126.6(b); *Village Laguna of Laguna Beach, Inc. v. Bd. of Supervisors* (1982) 134 Cal.App.3d 1022, 1028–1029 [rejecting call to evaluate alternative falling within the densities already included in the EIR]; *Tracy First v. City of Tracy* (2009) 177 Cal.App.4th 912, 929–930 [rejecting call for reduced-size store alternative because alternative would not reduce significant impacts of the project].)

The DEIR considered two project alternatives in detail: the No Project Alternative and Reduced Turbine Height Alternative. The latter alternative was responsive to one of the primary issues raised by the ALUC, turbine height. Ultimately, while Reduced Turbine Height Alternative would lessen one impact the remaining impacts would be similar to, but slightly greater than, those of the proposed project, so the DEIR concluded that the proposed project would be the environmentally superior alternative. Such a limited range of alternatives is appropriate where, as here, there are so few variations or significant impacts of the project. (See, e.g. *Marin Municipal Water Dist. v. KG Land Cal. Corp.* (1991) 235 Cal.App.3d 1652, 1666 [upheld EIR that evaluated two

alternatives—a no project alternative and conservation alternative].) No additional alternatives are necessary to adequately evaluate the project and assess its impacts in relation to other policy considerations (including satisfying the objectives of the project). The commenter does not provide evidence on how additional alternatives would enhance the analysis or result in potentially different impact conclusions. No revisions are necessary. Please also see response to L5-23 above.

L5-26 DEIR fails to provide a reasonable range of alternatives. The commenters contend that the DEIR fails to provide a range of alternatives as required by CEQA by identifying the proposed project as the environmentally superior "alternative." The commenters suggest alternatives that could and should have been considered (alternative configuration of WTGs, alternative phasing). The commenters claim SMUD project objectives are too narrow and cite case law.

Please see responses to L5-23 and L5-25 above. No changes are necessary.

L5-27 Renewables Portfolio Standards (RPS) renewables are wide ranging in terms of location and type of project. The commenter describes a range of RPS "eligible renewable sources" in North America including biodiesel, biomass, biomethane (including digester gas, and landfill gas), fuel cells using renewable fuels, geothermal, hydro-electric, municipal solid waste combustion and conversion, ocean wave, ocean thermal, solar, tidal current, and wind.

The comment is noted. Please see responses to L5-23 and L5-25 above. Other than the rule of reason, however, there is no categorical legal imperative or ironclad rule governing the nature or scope of the alternatives to be evaluated (Guidelines, § 15126.6(a), (f)). Indeed, an EIR need not consider "every conceivable alternative" to the proposed action. (*In re Bay-Delta* (2008) 43 Cal.4th 1143, 1162–1163). In particular here, SMUD was not required to consider alternatives that would fundamentally alter the essential nature of the project, or that the commenter has not shown provide any environmental advantages over the proposed project. A different project at a different location would also result in potential impacts to diverse resources and attempting to analyze them in the EIR would be speculative. Nevertheless, Section 6.2.3 of the DEIR does provide a discussion of why offsite alternatives and alternative technologies were considered but rejected from further consideration. The comment also fails to acknowledge that SMUD is already undertaking several initiatives to help meet its RPS and GHG reduction goals; the Solano 4 Wind Project is essential part of that effort. As described above under response L5-23, SMUD's 2030 Plan has been approved by the Board and calls for the addition of up to 2,300 MW of new renewables and 1,100 MW of batteries by 2030 – more than double the amount SMUD was planning for in its 2018 IRP. The 2030 Plan calls for maximizing new cost-effective utility-scale renewables within our service territory (up to 1,500 MW utility solar), but also requires

SMUD to add additional resources that it does not have locally, such as wind and geothermal. SMUD analyzed the resources to meet the 2030 goal and concluded that more wind than the Solano 4 Wind project would be needed to achieve the goal, as well as additional technologies that are either currently unknown or are not ready for large-scale adoption due to price, reliability or other factors. No changes in the DEIR are necessary.

L5-28 Temporal Alternatives. The commenter argues that the Renewables Portfolio Standard would not require the project's construction right now, but that it requires procurement of renewables that will overall be a specified percentage of annual retail sales by specified target dates. The commenter states there are numerous other alternatives available to SMUD including "building something else, somewhere else, at some other time and CEQA requires consideration of those alternatives."

Please see response to L5-23 above. No changes are necessary.

L5-29 Meeting SMUD's Net Zero Goal. The commenter states that according to SMUD's Policy SD-9, SMUD meets its Net Zero goal via other methods (investments in vehicles and building electrification and energy efficiency); and in meeting GHG reduction goals, SMUD shall emphasize local and regional environmental benefits. The commenter argues that "such regional and environmental benefits would be furthered by ensuring consistency with the LUCP." Lastly, the commenter states that "an alternative need not meet every project objective or be the least costly in order to be feasible."

Please see response to L5-23 above. SMUD has concluded that it will not meet its project and system-level objectives (Net Zero) without providing the additional renewable energy capacity provided by the Solano 4 Wind Project. As described in the DEIR section 6.3.2, the Reduced Turbine Height Alternative would introduce 27 WTG compared to the 22 WTG for the project. As such, all construction activities and resulting criteria air pollutants would be similar to, but slightly greater than, those of the project. Further significant impacts of the project can be avoided without having to resort to any project alternatives. No changes are necessary.

L5-30 The DEIR must be recirculated. The commenter states CEQA guidelines regarding the circumstances that require recirculation of a DEIR including (1) the addition of significant new information to the EIR after public notice is given of the availability of the DEIR but before certification, or (2) the DEIR is so "fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were precluded." The commenter argues that both circumstances apply here and that the DEIR "repeatedly understates and does not provide the relevant information regarding the project's significant land use and air safety impacts." The commenter states that the DEIR relies exclusively on the FAA's NHD (DNH) and assumes without analysis that minimalistic mitigation measures would effectively reduce the project's impacts on air safety and land use. The commenter contends that SMUD must prepare a revised EIR that would include substantial new information, including the information included in the

letter. The commenter reiterates that "it is mandatory and imperative that SMUD obtain a consistency determination from the ALUC prior to proceeding with the Solano 4 Wind Project."

SMUD disagrees. The DEIR is sufficiently detailed so that the public and decisionmakers are properly informed and can conduct meaningful evaluation of the way project impacts were avoided, minimized, or mitigated. The DEIR did not rely solely on the FAA's DNHs, which were themselves supported by FAA modeling of all aerial navigation and safety impacts under that agency's jurisdiction and its conclusions are supported by that additional substantial evidence in the DEIR and this FEIR. While additional information has been provided in this FEIR and its appendices, that information merely amplifies and clarifies the evidence and findings in the DEIR. In that respect, recirculation is unwarranted. (CEQA Guidelines, § 15088.5(a)-(b); *San Francisco Baykeeper, Inc. v. Cal. State Lands Com.* (2015) 242 Cal.App.4th 202, 224–225.) Please also see the Master Response *Land Use* for an explanation of why the project is exempt from ALUC review. Also, please see response L5-1 above. No revisions are necessary and recirculation is not required.

This response to the memorandum from Dr. Jerry Johnson, Director of Engineering Regulus Group, LLC dated August 6, 2019 was written in collaboration with Geoff Blackman, Owner/Principal Westslope Consulting, LLC and Joe Anderson, Director of Airspace Consulting Capitol Airspace Group, LLC. Westslope Consulting and Capitol Airspace Group provided a joint letter dated March 30, 2021 addressing each of the points raised by Dr. Johnson, which is included in Appendix C of this Final EIR.

Letter	**Dr. Jerry Johnson, Director of Engineering**
L5a-1	**Regulus-Group, LLC**
Response	**August 6, 2019**

L5a-1 The commenter addresses air safety impacts in the DEIR and states that it is well known that utility scale wind turbines impact primary surveillance radar systems when the turbines are located within the line of sight of the radar. The commenter notes that the existing turbines in the proposed project area have created turbine radar interference at Travis Air Force Base (AFB). To adjust, the AFB had to move/lose a circling approach. Per the commenter, the AFB would like to reclaim the lost airspace.

As the Draft EIR acknowledges, utility scale wind turbines within radar line-of-sight of a primary surveillance radar, such as the Travis AFB digital airport surveillance radar (DASR), could have an adverse effect on radar performance (see DEIR, page 3.7-14). In fact, Travis AFB has served and continues to serve as an excellent source of information for the United States government and the wind industry in understanding the effects that multiple wind projects can have on a DASR and the display system used by the air traffic controllers, the Standard Terminal Automation System (STARS), at the Travis AFB Radar Approach Control (RAPCON) facility. Travis AFB and the wind projects in the Collinsville-Montezuma Hills Wind Resource Area (WRA) also served as an excellent source of information in determining how to manage or lessen the effects of wind turbines for a DASR and STARS air traffic control systems configuration. Part of this work was conducted under Cooperative Research and Development Agreement (CRADA) No. 10-002 in collaboration with Travis AFB, Westslope Consulting, LLC (Westslope), and three wind project developers including the Sacramento Municipal Utility District (SMUD) (Air Mobility Command, 2010; United States Transportation Command Cooperative Research and Development Agreement, 2010). It should also be noted that while there would be negligible effects on the DASR, the Monopulse Secondary Surveillance Radar (MSSR), which is the secondary surveillance radar that is co-located with the DASR and is the main radar used for air traffic control by the base, was shown to not be affected by wind turbines. The MSSR interrogates transponder equipment on board the vast majority of aircraft operating in and around the Travis AFB RAPCON's airspace.

Secondary surveillance radar systems, such as the MSSR, are less susceptible to interference from wind turbines than primary surveillance radar. Unlike primary surveillance radar that depends on reflected energy to discern aircraft, secondary surveillance radar relies on, in general terms, two-way communication with aircraft via operating transponders. This process is cooperative whereby the secondary surveillance radar transmits a set of pulses at one frequency to interrogate transponders, then receives and processes replies from operating transponders at another frequency. Because of the use of different transmit and receive frequencies, secondary surveillance radar is not as susceptible to the effects of clutter that interfere with the performance of primary surveillance radar. Clutter is unwanted radar returns from the ground, rain or other precipitation, buildings, antenna towers, transmission lines, wind turbines, vehicular traffic, and birds. Some publicly available United States government research has considered the effects of wind turbines on secondary surveillance radar. A Department of Homeland Security (DHS) funded study conducted by JASON found that "[s]econdary (i.e., transponder, or "beacon") tracks were rarely affected" by wind farms. JASON is a group of the nation's top scientists that advises the United States government (JASON, The MITRE Corporation, 2008). In addition, the Department of Energy, Department of Defense (DOD), DHS, and the Federal Aviation Administration (FAA) sponsored flight trials conducted by Massachusetts Institute of Technology/Lincoln Laboratory (MIT/LL) and Sandia National Laboratories as part of an Interagency Field Test and Evaluation (IFT&E) program noted that "primary surveillance radars are severely impacted by wind turbines while the beacon transponder-based secondary surveillance radars was not affected by wind turbines." (Sandia National Laboratories, 2014).

The below excerpts are from the Solano 4 Wind Project (Solano 4) Determinations of No Hazard (DNHs) issued by the FAA originally on February 1, 2019, and after further DOD and FAA review, were recently extended on January 28, 2021.

> "Simply being "seen" by the radar is not the real issue though. How that target (in this case, the wind turbine) is processed and displayed for ATC is the key. The users of the system (ATC) is the sole decider on whether the system is acceptable to be able to perform their duties. Although there may be others entities using these radar systems, the responsibility and authority of the FAA is the safe and efficient use of the navigable airspace, including the impact of the radar effects on air navigation."
>
> "The turbines would be within the line of sight of the Stockton, CA. (SCK) ASR-11, the Travis (SUU) DASR, the Mill Valley (QMV) ARSR-4, and the McClellan (MCC) ASR-9 facilities. The proposals will affect the quality and/or availability of radar signals. The effects would be unwanted primary returns (clutter) and primary target drops, all in the area of the turbines.

> Tracked primary targets could diverge from the aircraft path and follow wind turbines, when the aircraft is over or near the turbines."
>
> "However, this would not cause an unacceptable adverse impact on ATC operations at this time."
>
> "The cumulative impact of the proposed structures, when combined with other proposed and existing structures, is not considered to be significant. Study did not disclose any significant adverse effect on existing or proposed public-use or military airports or navigational facilities, nor would the proposals affect the capacity of any known existing or planned public-use or military airport."
>
> "Therefore, it is determined that the proposed construction 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 providing the conditions set forth in this determination are met."

The extension process resulted in the formation of a Mitigation Response Team (MRT) with Travis AFB as required by the DOD Military Aviation and Installation Assurance Siting Clearinghouse (the "DOD Siting Clearinghouse") mission compatibility evaluation process as documented in Part 211 of Title 32 of the Code of Federal Regulations (Military Aviation and Installation Assurance Siting Clearinghouse, accessed 2021). The DOD Siting Clearinghouse was established under direction of the United States Congress per the National Defense Authorization Act for Fiscal Year 2011 (H.R.6523, 2011). The result of the MRT review was a conclusion by the 60th Air Mobility Wing of "[a]s proposed, Solano 4 should have minimal negative impact on Travis Operations" and a conclusion by the DOD Siting Clearinghouse that Solano 4 "will not present an adverse impact to military operations." (Simmons, 2021; Sample, 2021).

When evaluating the effects of wind turbines on radar, it is important to distinguish between effects and operational impacts. Effects do not always translate into operational impacts (i.e., a substantial adverse effect). As a result of early consultation with Travis AFB and Solano County's Windfarm Re-Power Group dating back to April 21, 2016, SMUD and Westslope undertook a substantial effort to identify a wind project configuration—considering different wind turbine layouts, numbers of wind turbines, and wind turbine models—for Solano 4 to ensure there would be no additional effects as a result of the project on the DASR and on the air traffic controllers' displays in STARS. In the spirit of collaboration, the results of multiple radar cumulative impact studies were presented to Travis AFB prior to filing the Solano 4 wind turbines with the FAA (Westslope, 2018a).

Westslope's studies indicate that removing and replacing 23 existing wind turbines with up to 22 136-meter rotor diameter or up to 19 150-meter rotor diameter modern wind turbines will have no material difference to the DASR or on the air traffic controllers' displays in STARS.

The Solano 4 wind turbines are located outside of Travis AFB circling approach areas and will have no effect on the base's published visual flight rules (VFR) operations or on instrument flight rules (IFR) operations (U.S. Department of Transportation, 2016, 2018). Solano 4 will replace 23 existing Vestas V47 wind turbines, which currently interfere with the Travis AFB DASR, with up to 22 136-meter rotor diameter or up to 19 150-meter rotor diameter wind turbines. Because construction of Solano 4 will result in fewer overall wind turbines and the proposed wind turbines will have no effect on the base's published VFR or IFR operations, Solano 4 will have no material difference on the performance of the DASR and STARS configuration compared to current conditions and will not impact current RAPCON air traffic operations. Further, the secondary surveillance radar co-located with the DASR, which is the main radar used for air traffic control, will not be affected. These conclusions regarding impacts are supported by the MRT process and FAA's DNHs that states that the Solano 4 wind turbines "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."

With regards to the desire of Travis AFB to "reclaim airspace," it should be noted that the existence of extensive wind energy development in the Montezuma Hills is an existing condition and thus would be considered part of the baseline against which the potential impacts of the Solano 4 Wind Project are evaluated. It is well settled that ongoing activities—here, operations of the existing wind turbines—are part of the existing conditions baseline. (See, e.g., *Communities for a Better Env't v South Coast Air Quality Mgmt. Dist.* (2010) 48 Cal.4th 310; *Mount Shasta Bioregional Ecology Ctr. v County of Siskiyou* (2012) 210 Cal.App.4th 184, 200; *Citizens for E. Shore Parks v State Lands Comm'n* (2011) 202 Cal.App.4th 549 [lease renewal for marine terminal serving an oil refinery included the terminal and its ongoing operations in its existing conditions baseline].) It is not the purpose of the EIR or any proposed mitigation to ameliorate existing conditions. Rather, the purpose of the Draft EIR is to address the nature and extent of impacts to the extent resulting from the proposed project and to offset those impacts.

L5a-2 The commenter addresses the potential for additional wind turbines by making several points. Point one per the commenter is that the DEIR does not include information needed to inform decision makers and the public about the scope of the project's impacts. The commenter notes that the DEIR refers to an FAA aeronautical study conclusion that navigable airspace is not affected by turbine operation, but the DEIR does not mention that the study also reports that quality

and availability of radar signals would be affected. The commenter further notes that when wind turbine radar interference (i.e., clutter) is high, air traffic controller workloads can increase due to the creation of track duals (false tracks), which increase the need for more coordination between controllers and pilots and greater distances among aircraft, and may impact aircraft maneuvers.

The DEIR focused on the conclusion of the aeronautical study process rather than FAA's initial findings. As pointed out by Dr. Johnson, the FAA's initial findings state that the "[t]he proposals will affect the quality and/or availability of radar signals. The effects would be unwanted primary returns (clutter) and primary target drops, all in the area of the turbines. Tracked primary targets could diverge from the aircraft path and follow wind turbines, when the aircraft is over or near the turbines." This language is standard language used by the FAA for any wind turbine that is within line-of-sight of a primary surveillance radar and is used to inform the proponent of a wind project that further study is required to determine whether these effects could result in operational impacts.

After in-depth study, at the request of SMUD, the FAA determined that Solano 4 "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." Further, the DNHs state that the aeronautical studies "considered and analyzed the impact on existing and proposed arrival, departure, and en route procedures for aircraft operating under both visual flight rules and instrument flight rules; the impact on all existing and planned public-use airports, military airports and aeronautical facilities; and the cumulative impact" resulting from Solano 4 when combined with the impact of other existing structures.

Regarding "track duals," Dr. Johnson appears to be confusing this term with "false targets." Track duals and false targets are two different effects. It is also possible that Dr. Johnson may be confusing track duals with a phenomenon identified during testing of in-fill radar ongoing at Travis AFB at this time.

While false primary targets are possible, replacing the 23 existing wind turbines with up to 22 136-meter rotor diameter or up to 19 150-meter rotor diameter modern wind turbines will have no material difference in the number of false primary targets reported by the DASR or in the number of the false primary tracks on the air traffic controllers' displays in STARS. After construction, system optimization, including updating the range-azimuth gate map in the DASR, will address the difference in the location and number of wind turbines. In other words, the conditions under the Solano 4 Wind Project would not be any different than the current condition. Thus, the DEIR did not identify a significant impact and no mitigation is required.

Further, the Project will not adversely affect safety through any indirect increase in the workload of individual traffic controllers. As discussed in detail by Mr.

Geoff Blackman with ALUC Commissioners at the ALUC's May 2021 Commission Meeting, this is due to the efforts of SMUD and its consultants to eliminate a net increase in radar interference impacts over baseline through design, number, and location of wind turbines.[1] The FAA concurred that there will be no unacceptable adverse impact to air traffic controller operations at this time (Federal Aviation Administration Determination of No Hazard to Air Navigation, Aeronautical Study No. 2018-WTW-13388-OE to 2018-WTW-13406-OE).

L5a-3 The commenter's second point is that while the DEIR indicates that the wind turbines would not be a hazard to air navigation if the turbines are properly painted and lighted, these are measures for obstruction avoidance and would not mitigate the turbines' interference with radar or air traffic control.

Per the FAA issued DNHs, Solano 4 "would have no substantial adverse effect on the safe and efficient utilization of the navigable airspace by aircraft" and "would not be a hazard to air navigation" provided the wind turbines are marked/lighted in accordance with FAA Advisory Circular 70/7460-1 L Change 2, Obstruction Marking and Lighting. This advisory circular provides the FAA's standard for marking and lighting to ensure the appropriate daytime and nighttime conspicuity so that pilots can visibly see and avoid wind turbines. Please see the Master Response for additional information on the FAA process and regulations.

L5a-4 The commenter's third point is that the DEIR does not mention that Air Traffic Control (ATC) Minimum Vectoring Altitudes (MVAs) for the turbine area would need to be increased. The commenter notes that the FAA has identified this as an adverse effect.

During the aeronautical study process, the FAA's prime objective is to ensure the safety of air navigation and the efficient utilization of navigable airspace (U.S. Department of Transportation, 2019a). As many as ten different government offices take part in each study, including: the FAA's Office of Airports, Instrument Flight Procedures Impact Team, Flight Standards, Technical Operations, and Frequency Management, and the United States Air Force, United States Navy, United States Army, DHS, and the DOD. The FAA utilizes the information provided by each office, as well as defined metrics, to determine whether or not the proposed wind turbines would be hazardous (U.S. Department of Transportation, 2019b). Please see the Master Response for additional information on the FAA process.

During the review of Solano 4, the FAA identified that the proposed wind turbines would have an adverse effect on a minimum vectoring altitude (MVA) sector. A MVA defines the lowest altitude that air traffic controllers can normally

[1] (Solano County ALUC Hearing Transcript, May 20, 2021, at pp. 71-72.

issue radar vectors to aircraft and is based on obstacle clearance. Specifically, the FAA identified an effect on Sector MCC_B which is utilized by the air traffic controllers at Northern California Terminal (NCT) Radar Approach Control (TRACON). To address this effect, the FAA requires Form 7460-2, Part 1, Notice of Actual Construction or Alteration to be submitted at least 60 days before the start of construction so that appropriate action can be taken to amend the affected procedure(s) and/or altitude(s), if necessary. By SMUD e-filing FAA Form 7460-2, Part 1, Notice of Actual Construction or Alteration at least 60 days before the start of construction, the FAA would take appropriate action to amend the affected procedure(s) and/or altitude(s), if necessary." The FAA will modify Sector MCC_B by increasing the MVA from 1,700 to 1,800 feet above mean sea level (MSL). This increase ensures the appropriate obstacle clearance and, as a result, maintains safety (U.S. Department of Transportation, 2018). This amendment to modify the sector by increasing the MVA to 1,800 feet MSL removes the adverse effect on the MVA sector. Lastly, Northern California TRACON confirmed that this would not have an operational impact on providing radar vectoring services. For these reasons, the effect on a MVA sector will not result in the degradation of safety or efficiency. Mitigation measure 3.7-3 in the DEIR states that "SMUD will e-file FAA Form 7460-2, Part 1, Notice of Actual Construction or Alteration at least 60 days before the start of construction, so that appropriate action can be taken to amend the affected procedure(s) and/or altitude(s), if necessary." Thus, the DEIR did not identify any significant impacts related to air traffic safety and no additional mitigation is required.

L5a-5 *The commenter's fourth point is that while the DEIR acknowledges that the project could have potentially significant adverse impacts, it does not provide enough information about the impacts for readers to comprehend them. The commenter states that the DEIR should 1) discuss objective metrics regarding the effects on radar performance, 2) compare clutter tracks over the wind turbine area with the additional clutter that would be generated by the new turbines, 3) compare expected dual tracks with real targets and provide metrics such as length measured over a span of time, and 4) discuss increased operator workload (controllers and pilots) due to clutter and provide metrics regarding this.*

As stated above, SMUD undertook extensive efforts to identify a wind project configuration for Solano 4 to ensure there would be no additional effects as a result of the project on the DASR and on the air traffic controllers' displays in STARS. Results of an initial cumulative impact study conducted by Westslope, employing the same method verified under CRADA No. 10-002 and using primary probability of detection (Pd) as a metric, showed that the 22 136-meter rotor diameter wind turbines will result in a 0.1 percent overall decrease in the primary Pd over the Collinsville-Montezuma Hills WRA. A subsequent cumulative impact study for 19 150-meter rotor diameter wind turbines at the proposed locations showed no drop in the primary Pd. In other words, the

conditions under Solano 4 will result in no material difference on the performance of the DASR and STARS configuration compared to existing conditions. These findings were presented to Travis AFB on September 6, 2018 and were used to support the current layouts proposed for the Solano 4 wind turbines. Please see Appendix A of this FEIR for copies of the specific technical studies conducted.

As determined by the supplemental Basic Radar Line-of-Sight Study (Westslope 2018b) and the FAA as stated in the Solano 4 DNHs, the turbines would be within the line of sight of the Stockton, CA. (SCK) ASR-11, the Travis (SUU) DASR, the Mill Valley (QMV) ARSR-4, and the McClellan (MCC) ASR-9 facilities. Per the FAA Solano 4 DNHs, the proposals will affect the quality and/or availability of radar signals. The effects would be unwanted primary returns (clutter) and primary target drops, all in the area of the turbines. Tracked primary targets could diverge from the aircraft path and follow wind turbines, when the aircraft is over or near the turbines." The FAA DNHs conclude, "[h]owever, this would not cause an unacceptable adverse impact on ATC operations at this time."

The number of false primary targets reported by the DASR and the number of false primary tracks presented on the STARS' displays were also considered as a metric during these studies; however, based on Westslope's experience with the Travis AFB DASR and STARS, as well as other similar facilities, and the fact that Solano 4 will replace 23 existing wind turbines with 22 or 19 new wind turbines, Westslope expects no material difference in the number of false primary targets out of the DASR or the number of false primary tracks on the STARS' displays. As stated above, the result of the MRT review was a conclusion by 60th Air Mobility Wing Commander of "[a]s proposed, Solano 4 should have minimal negative impact on Travis Operations" and a conclusion by the DOD Siting Clearinghouse 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 providing the conditions set forth in this determination are met." Further, SMUD received extensions for the 19 DNHs for Solano 4 Wind Project on January 28, 2021, as requested. Also, please see the Master Response for additional information about SMUD's coordination efforts with Travis AFB.

L5a-6 The commenter's fifth point is that the DEIR does not discuss other potentially feasible means to mitigate the project's adverse impacts, such as a Pilot Mitigation Program at Travis AFB that is studying how in-fill radar systems could mitigate turbine radar interference, or an effort that is underway to develop radar processing algorithms that could reduce clutter on air traffic control screens. The commenter

notes that these are not yet proven or certified for use, and so the only way to limit turbine impacts on radar systems is to locate the turbines beyond the line-of-sight of the radar.

As discussed above and in the cumulative impact studies conducted by Westslope, the Solano 4 wind turbines will result in no material difference on the performance of the DASR and STARS configuration compared to existing conditions, and will not impact current RAPCON air traffic operations. Further, the secondary surveillance radar co-located with the DASR, which is the main radar used for air traffic control, will not be affected. These conclusions are supported by the FAA's DNHs that states that the Solano 4 wind turbines "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". Based on the analysis conducted, the DEIR concluded that there would be no significant impact to air traffic safety resulting from the project; therefore, exploration of further mitigation is not necessary. No changes to the DEIR are needed.

Letter 6

STATE OF CALIFORNIA

Governor's Office of Planning and Research

State Clearinghouse and Planning Unit

Gavin Newsom
Governor

Kate Gordon
Director

September 6, 2019

Ammon Rice
Sacramento Municipal Utility District
6201 S Street, MS H201
Sacramento, CA 95817

Subject: Solano 4 Wind Project Environmental Impact Report
SCH#: 2019012016

Dear Ammon Rice:

The State Clearinghouse submitted the above named EIR to selected state agencies for review. The review period closed on 9/5/2019, and the comments from the responding agency (ies) is (are) available on the CEQA database for your retrieval and use. If this comment package is not in order, please notify the State Clearinghouse immediately. Please refer to the project's ten-digit State Clearinghouse number in future correspondence so that we may respond promptly.

Please note that Section 21104(c) of the California Public Resources Code states that:

> "A responsible or other public agency shall only make substantive comments regarding those activities involved in a project which are within an area of expertise of the agency or which are required to be carried out or approved by the agency. Those comments shall be supported by specific documentation."

6-1

Check the CEQA database for submitted comments for use in preparing your final environmental document: https://ceqanet.opr.ca.gov/2019012016/2 . Should you need more information or clarification of the comments, **we recommend that you contact the commenting agency directly.**

This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act. Please contact the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process.

Sincerely,

Scott Morgan
Director, State Clearinghouse

cc: Resources Agency

1400 TENTH STREET P.O. BOX 3044 SACRAMENTO, CALIFORNIA 95812-3044
TEL 1-916-445-0613 state.clearinghouse@opr.ca.gov www.opr.ca.gov

	Scott Morgan, Director
Letter	**State of California Governor's Office of Planning and Research**
6-1	**State Clearinghouse and Planning Unit**
Response	**September 6, 2019**

L6-1 *Letter of Acknowledgement from the State Clearinghouse. The commenter states that this letter acknowledges that SMUD has complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to CEQA.*

SMUD notes the acknowledgement from the State Clearinghouse that they have complied with the State Clearinghouse's review requirements for draft environmental documents, pursuant to CEQA. No response is required.

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3 Corrections and Revisions to the Draft EIR

This chapter contains changes to the text of the Draft EIR in response to certain comments. These changes are generally referenced in the responses to comments in Chapter 2, or are provided to be consistent with changes referenced in Chapter 2. The changes are presented in the order in which they appear in the Draft EIR and are identified by Draft EIR page number. Text deletions are shown in strikeout (~~strikeout~~) and additions are shown in double underline (double underline). The changes identified below do not alter the conclusions of the EIR with respect to any of the significant impacts of the project and do not necessitate recirculation of the Draft EIR.

3.1 Revisions to the Project Description

In response to comment L4-3 from the Solano County Department of Resource Management, the Airport Land Use Commission (ALUC) has been added to Table 2-4 under "*State*" of the DEIR as follows:

Table 2-4. Other Agency Permits and Approvals Required for the Proposed Project

State		
State Water Resources Control Board	Clean Water Act Section 402, construction stormwater permit	Prevent discharge of construction-related pollutants to waters of the United States.
San Francisco Bay Regional Water Quality Control Board	Clean Water Act Section 401, water quality certification	Prevent the discharge of construction-related pollutants to waters of the United States.
California Department of Fish and Wildlife	Streambed alteration agreement	Allow the project to alter a bank or streambed located in California.
California Department of Transportation	Haul truck and overload permit	Permit oversize trucks to travel on local roadways.
Solano County ALUC	ALUC consistency determination review is not required, but is advisory to SMUD	The consistency determination process is advisory only. On May 20, 2021, the ALUC determined that the project is inconsistent with the Travis Air Force Base Land Use Compatibility Plan (LUCP). SMUD Board of Directors is proposing to overrule the ALUC determination after a noticed public hearing, with the required number of votes of its Board members and after making the requisite findings under the State Aeronautics Act (SAA). The proposed decision and findings were circulated to ALUC and California Department of Transportation, Division of Aeronautics on July 2, 2021 as per the SAA process requirements.

3.2 Revisions Clarifying Collection and Home Run Lines

The following minor revisions have been made to clarify reference to collection and home run lines and not transmission lines. The minor revisions in no way chance the impact conclusions presented in the Draft EIR; therefore, recirculation of the EIR is not required.

Aesthetics (Chapter 3.1, page 3.1-35)

Mitigation Measure 3.1-1a: Design the Project to Avoid Aesthetic Impacts.

SMUD or its contractor shall consider topography when siting wind turbines and shall avoid major modifications to natural landforms or other characteristic parts of the landscape. The turbines shall be clustered or grouped to break up overly long lines of turbines. The turbines shall be similar in shape and size.

Each WTG shall be painted a uniform white or light-grey color, “RAL 7035” or similar, per manufacturer’s requirements. To minimize the structures’ reflectivity, the paint used shall have a gloss level that does not exceed 30 percent, or 60–70 gloss units,1 as calculated by the manufacturer. The surfaces of all other structures (e.g., meteorology towers) shall be given low-reflectivity finishes with neutral colors to minimize the contrast of the structures with their backdrops.

Fewer, larger turbines shall be preferred over more, smaller turbines. Commercial messages and symbols shall be prohibited on wind turbines. Collection and home run lines shall be underground; no overhead collection or home run ~~transmission~~ lines shall be used.

To minimize ground disturbance, to the extent feasible, existing roadways shall be used to access turbine pads. All construction-related areas shall be kept clean and tidy, with construction materials and equipment stored in the construction staging and laydown areas and/or generally away from public view. SMUD or its contractor shall remove construction debris promptly at intervals of 2 weeks or less, at any one location.

Biological Resources (Chapter 3.3, page 3.3-2)

Between 2016 and 2019, numerous project-specific biological resources surveys were completed in the proposed project subareas, Solano 4 West and Solano 4 East, and along the electrical ~~transmission~~ home run lines that run northward and westward, respectively, from each subarea to the centrally located Russell Substation (Exhibit 2-2 in Chapter 2, “Project Description”).

Hazards and Hazardous Materials (Chapter 3.7, page 3.7-17)

Exposure of people or structures to the risk of wildfires

The project would place electrical ~~transmission~~ collection and home run lines underground to avoid potential for arcing lines to spark a fire. The WTGs are monitored by a SCADA which is able to monitor operating conditions and inform the operators of abnormal activity so actions can be taken to avoid overheating a WTG causing potential mechanical failure.

Hydrology and Water Quality (Chapter 3.8, page 3.8-8 and 3.8-9)

A portion of the Solano 4 West subarea is located within the Secondary Management Area. According to the Suisun Marsh Local Protection Program, the upland grasslands and cultivated lands of the Secondary Management Area provide habitat for marsh-related wildlife. More importantly, through their location and existing uses, they buffer the wetlands and lowland grasslands from the adverse impacts of both urban development and other upland land uses and practices incompatible with preservation of the marsh. The Suisun Marsh Preservation Act also identifies protected channels within the Suisun Marsh watershed and the watershed's overall boundaries. Although the Solano 4 West project subarea, the majority of the ~~transmission~~ collection line corridors, and a portion of the Solano 4 East subarea are within the Solano Marsh watershed, no protected channels intersect with any planned project components (Solano County 2018).

Cumulative Impacts (Chapter 4, page 4-4 and 4-5)

Visual changes during operation of the project, including the presence of taller WTGs would not be noticeable to residents, recreationists, and motorists in the area. The proposed WTGs would be slightly taller than the existing WTGs in the area but the number of WTGs would be reduced from current conditions. The mean height for the existing WTGs is 396 feet; the mean height for the largest of the WTGs proposed for the Solano 4 Wind Project is 591 feet. All ~~transmission~~ electrical collection and home run lines infrastructure associated with the project would be placed underground. Implementation of Mitigation Measures 3.1-1a and 3.1-1b would reduce potential visual effects. Therefore, the impact of the proposed project on scenic vistas and the visual character of the site and adjacent scenic roadways would be less than significant.

3.3 Revisions to Biological Resources

In response to comment L1-2, the following revisions have been made to Mitigation Measure 3.3-1a: Avoid and minimize impacts on California tiger salamander. The Draft EIR is revised as follows:

> ***Mitigation Measure 3.3-1a: Avoid and minimize impacts on California tiger salamander.*** SMUD will implement the following measures to avoid and minimize potential construction impacts on California tiger salamander:
>
> - A qualified California tiger salamander biologist (defined as an individual with 3 years of experience conducting surveys for California tiger salamander and habitat in the project region) will be present on-site to conduct monitoring during project construction and decommissioning activities that disturb surface soils within 250 feet of drainages or any other aquatic features identified as suitable for California tiger salamander (AECOM 2018b).
> - ~~To the extent possible ,~~SMUD will confine all project-related parking, storage areas, laydown sites, equipment storage, and any other surface-disturbing activities to previously disturbed areas or areas that are not suitable habitat for California tiger salamander (AECOM 2018b). To the extent it is not possible to limit

such activities to previously disturbed areas or areas that are not suitable habitat for California tiger salamander, the qualified biologist will perform a preconstruction survey within 48 hours before constructing project-related parking, storage areas, laydown sites, and equipment storage sites to ensure California tiger salamander are not present. If a California tiger salamander is found within the project area, SMUD will implement any actions necessary to avoid take of California tiger salamander including establishing appropriate buffer area and exclusion fencing in consultation with USFWS and/or CDFW. If after avoidance measure cannot avoid take, SMUD shall seek an Incidental Take Permit from USFWS and/or CDFW, as appropriate, and implement any measures specified therein to reduce chances of take and minimize and fully mitigate any incidental take (including the measures in this MM 3.3-1a).

- All steep-walled holes or trenches that are 1 foot deep or greater and located within 250 feet of aquatic habitat that is suitable for CTS will have at least one escape ramp constructed of earthen fill or wooden planks. All such holes or trenches will be completely covered before sunset of each workday using boards or metal plates that are placed flush to the ground, and will be inspected before the start of daily construction activities.

- To prevent inadvertent entrapment of California tiger salamanders during project construction, maintenance, and decommissioning, all construction pipes, culverts, conduits, and other similar structures stored on-site overnight will be inspected before the structure is buried. Plastic monofilament netting will not be used for sediment control because it could pose an entrapment hazard to California tiger salamanders and other wildlife.

In response to comment L1-4, the following revisions have been made to Mitigation Measure 3.3-4a, to reflect the commenter's recommendations that preconstruction surveys be conducted for Swainson's hawks in accordance with Swainson's Hawk Technical Advisory Committee guidance. New text is indicated by underlining. The Draft EIR is revised as follows:

Mitigation Measure 3.3-4a: Avoid and minimize impacts on nesting raptors. SMUD will implement the following measures to avoid and minimize impacts on nesting raptors:

- If construction activities are scheduled to occur during the breeding season (February 1–August 31), SMUD will conduct preconstruction surveys in all potential suitable raptor nesting habitat within 0.25 mile of proposed construction areas, including trees, shrubs, grasslands, and wetland vegetation. A qualified wildlife biologist shall determine the timing of preconstruction surveys based on the time of year and habitats that are present, and shall conduct the surveys no more than 30 days before construction. The 30-day survey period allows flexibility in order for surveys to be conducted when the likelihood of nest detection is maximized (e.g., during courtship, nest building, or when feeding young).

- SMUD will conduct nesting surveys for Swainson's hawks in accordance with the Swainson's Hawk Technical Advisory Committee (TAC) guidance published in

2000 (Recommended Timing and Methodology for Swainsons' Hawk Nesting Surveys in California's Central Valley). These methods will require surveys to start early in the nesting season (late March to early April). Surveys will be conducted within a minimum 0.25-mile radius of the project area or a larger area if necessary to identify potentially active nests potentially affected by project construction. As required by the TAC guidance, surveys will be conducted for at least two survey periods in the nesting season, immediately before the start of project construction activities. The qualified biologist conducting the surveys will have a minimum of 2 years of experience in implementing the TAC survey methodology.

- SMUD will maintain no-disturbance buffers around active raptor nests during the breeding season, or until it is determined the young have fledged. The no-disturbance zone shall include a 500-foot buffer around all raptor nests (including owls) and a 0.25-mile buffer for any active Swainson's hawk nests.
    - No-disturbance buffer sizes for non-special-status species raptors may be increased or decreased by a qualified biologist based on the sensitivity of the species of raptor, or based on site conditions that affect disturbance, such as the type of work, vegetation structure or density, and the line of sight between construction work and the nest to nesting raptors.
    - No-disturbance buffer sizes for special-status raptor species may be increased or decreased by the qualified biologist in consultation with USFWS and CDFW as appropriate.
    - Buffers will not apply to construction-related traffic using existing roads that are not limited to project-specific use (e.g., county roads, highways, farm roads).
    - If no nests are observed during the preconstruction survey but nesting occurs after the start of construction, it will be assumed that the individuals are acclimated to the level of ongoing disturbance.
        - SMUD will clearly identify the locations of no-disturbance buffers (e.g., 250 feet, 500 feet, or 0.25 mile) on maps that will be made available to construction crews.
        - Before and during construction, a qualified biologist shall identify all active nest setback areas on construction drawings, and if appropriate, shall flag or fence the setback areas.
        - If construction is scheduled to occur during the non-nesting season, then no nesting bird surveys are required before construction activity begins, except provisions for surveys for burrowing owls outside the nesting season (September 1–January 31), as specified below in Mitigation Measure 3.3-4b.

In response to comment L1-4, the following revisions have been made to Mitigation Measure 3.3-5, to reflect the commenter's suggestions for additional text to clarify the requirements for the proposed Swainson's hawks foraging habitat mitigation lands.

Mitigation Measure 3.3-5: Acquire off-site mitigation to replace lost raptor foraging habitat.

SMUD will implement the following compensatory mitigation to offset net impacts on foraging habitat for breeding Swainson's hawks and other raptor species. Based on Swainson's hawk nest locations documented in recent years, no permanent project impacts on foraging habitat will occur within 1 mile of an active Swainson's hawk. Depending on whether the 150m WTG option or the 136m WTG option is selected, 25.38 acres or 30.49 acres of suitable Swainson's hawk foraging habitat will be required to mitigate this loss.

SMUD will mitigate the loss of Swainson's hawk foraging habitat in accordance with CDFW recommendations (DFG 1994) by providing mitigation lands as follows:

- Foraging habitat permanently lost within 5 miles of an active Swainson's hawk nest tree but more than 1 mile from the nest tree (either 25.38 acres or 30.49 acres, depending on the WTG option selected) will be replaced with 0.75 acre of mitigation land for each acre of foraging habitat permanently lost because of project construction (0.75:1 ratio). This ratio is consistent with recommendations in DFG 1994: "Projects within 5 miles of an active nest tree but greater than 1 mile from the nest tree shall provide 0.75 acres of habitat mitigation land for each acre of urban development authorized [0.75:1 ratio])." All mitigation lands protected under this requirement shall be protected in perpetuity in a form acceptable to CDFW (e.g., through fee title acquisition or conservation easement) on agricultural lands or other suitable habitats that provide foraging habitat for Swainson's hawk. The easement will be held by a governmental entity, special district, non-profit organization, for-profit entity, person, or another entity, to hold title to and manage the property provided that the district, organization, entity, or person meets the requirements of Sections 65965–65968 of the Government Code, as amended. As the State's trustee for fish and wildlife resources, CDFW is to be named as a third-party beneficiary under the conservation easement. SMUD will consult with CDFW in determining the suitability of the proposed mitigation lands to offset impacts of the project on Swainson's hawk foraging habitat.

- Management authorization holders/project sponsors will provide for management of the mitigation lands in perpetuity by funding a management endowment.

In response to comment L1-5, the following revision has been made to Mitigation Measure 3.3-4b to require consultation with CDFW to determine if passive relocation would be appropriate to avoid impacts on wintering or nesting burrowing owls, and to require mitigation at a 3:1 ratio to offset habitat loss.

Mitigation Measure 3.3-4b: Avoid and minimize impacts on burrowing owls.

To avoid and minimize impacts on burrowing owls, SMUD will implement the following guidelines adapted from the CDFW *Staff Report on Burrowing Owl Mitigation* (CDFG 2012):

- SMUD will have preconstruction burrowing owl surveys conducted in all areas that may provide suitable nesting habitat according to CDFW (CDFG 2012) guidelines. A qualified wildlife biologist shall conduct take avoidance surveys, including documentation of burrows and burrowing owls, in all suitable burrowing owl habitat within 500 feet of proposed construction. The take avoidance surveys, consisting of up to four visits, shall be initiated within 30 days of and completed at least 14 days before construction is initiated at a given location. In areas with burrows or refuge that could potentially support burrowing owls, a clearance visit shall be conducted within 24 hours of construction, including when construction work is reinitiated after a lapse of two or more weeks.
- SMUD will avoid disturbing active western burrowing owl nests and occupied nesting burrows.
    - In accordance with standard CDFW mitigation guidelines, SMUD and its construction contractor will avoid disturbance at occupied burrows in accordance with the following seasonal distance buffers for low, medium, and high levels of disturbance (CDFG 2012):
        - April 1 – August 15: 200 m (low), 500 m (medium), and 500 m (high)
        - August 16 – October 15: 200 m (low), 200 m (medium), and 500 m (high)
        - October 16 –March 31: 50 m (low), 100 m (medium), and 500 m (high)
    - These distances may be increased or decreased if, as determined by a qualified biologist, a different distance is required to ensure construction activities will not adversely affect occupied burrows or disrupt breeding behavior.
- If a qualified biologist, in consultation with CDFW, determines that construction could adversely affect occupied burrows during the September 1–January 31 nonbreeding season, ~~the qualified biologist~~ SMUD shall consult with CDFW to determine if ~~implement~~ passive relocation using one-way doors, in accordance with guidelines prepared by the California Burrowing Owl Consortium (CDFG 2012), should be implemented, and if off-site compensatory mitigation is required to offset habitat loss. Compensatory mitigation for loss of burrowing owl habitat would require protection of suitable mitigation lands in perpetuity at a minimum 3:1 mitigation ratio. ~~and through coordination with CDFW.~~

In response to comment L1-7, the following revision has been made to Mitigation Measure 3.3-9b, to clarify that post-construction monitoring would not consist of a

single survey at all turbines, but rather would require monthly surveys at all turbines for 1 year.

Mitigation Measure 3.3-9b: Conduct bird and bat mortality monitoring. To assess operational impacts on birds and bats and inform potential adaptive management and mitigation approaches, SMUD will conduct 1 year of postconstruction mortality monitoring in the project area, as follows:

- Qualified biologists shall monitor bird and bat mortality annually throughout the project area in accordance with the requirements set forth below, which incorporate guidelines described in SMUD's Solano BBCS (SMUD 2013), SMUD's Final Eagle Conservation Plan (SMUD 2014), and the California Guidelines for Reducing Impacts to Birds and Bats from Wind Energy Development (CEC and DFG 2007). The monitoring shall be conducted so that sufficient information is available to allow evaluation of WTG design characteristics and location effects that contribute to mortality, including information about the species, number, location, and distance of dead birds relative to WTG locations; availability of raptor prey species; and cause of bird and bat mortalities.
- Monitoring will be conducted monthly for 1 year at all turbines in the Solano 4 Wind Project area after the first delivery of power., and will include but not be limited to the following methods unless otherwise determined appropriate by SMUD:
    - The standard search radius will be 100 meters to account for terrain and WTG height.
    - A sufficient number of "road and pad" searches will be conducted to 150 meters to determine the proportion of carcasses falling outside of the standard (100-meter) search radius.
    - Searcher efficiency trials will be conducted for four seasons and will be sufficient to analyze differences in carcass size (small/medium/large) and vegetative cover.
    - Data will be analyzed using procedures described by the California Energy Commission and CDFW (CEC and CDFG 2007), or newer approaches (e.g., General Estimator [Dalthorp et al. 2018], the Evidence of Absence model [Dalthorp et al. 2017]). The data analysis will address adjusted fatality rates annually, seasonally, and by species. An annual report will be prepared each year and a final report will be prepared after the 1-year monitoring period.
    - If a carcass with a band is found in the project area, SMUD will promptly report the banding information to USFWS's Bird Banding Laboratory. SMUD will ~~coordinate~~consult with the laboratory to include any information provided by USFWS that is pertinent to avian mortality at the project site, if any, in the annual monitoring reports.

- After postconstruction monitoring data have been obtained, SMUD will review the data. In consultation with USFWS and CDFW, SMUD will determine which specific WTGs, if any, generate disproportionately high levels of avian mortalities (based on evidence of statistically significant higher levels of mortality relative to other WTGs), and whether adaptive management measures are needed to reduce or avoid mortalities at those specific WTGs.

- If unauthorized take of a federally listed or state-listed endangered or threatened avian or bat species occurs during project operation, SMUD will notify the appropriate agency (USFWS and/or CDFW) within 48 hours of the discovery, and will submit written documentation of the take to the appropriate agency within 2 calendar days. The documentation will describe the date, time, location, species, and if possible, cause of unauthorized take. Although not expected to occur, SMUD will implement any ~~actions required or recommended by~~ measures to avoid, minimize, or compensate for possible take in consulation with the USFWS and/or CDFW, including obtaining an Incidental Take Permit as appropriate~~as a result of the unauthorized take~~. Also see Mitigation Measure 3.3-9g *Implement Adaptive Management*.

SMUD will design and conduct postconstruction mortality monitoring in a way that ensures at least a 50 percent chance of detecting mortality of large raptors (including golden eagle and Swainson's hawk) caused by a collision with a project WTG. Modeling tools such as the Evidence of Absence model (Dalthorp et al. 2017) can be used to design studies with such an objective in mind. This may require adjusting the radius of the search area around the WTGs, the proportion of WTGs searched, or other standard parameters set forth above.

After postconstruction monitoring activities, SMUD will conduct an annual "clean sweep" survey around all Solano 4 turbines each subsequent calendar year for the life of the project. In addition, SMUD will continue its current practice of incidental monitoring of the project area ~~will continue~~ through reporting of incidental fatalities or injured birds by on-site staff to the Avian Reporting System (see Mitigation Measure 3.3-9h, "Implement Adaptive Management to Address Disproportionate Mortality of Special-Status Birds or Bats," below). SMUD will also continue to report incidental fatalities or injured birds in compliance with its USFWS Special Purpose Utility Permit (Permit ~~#MB98730A~~ #MB189818-0). As required in Mitigation Measure 3.3-9b SMUD will notify the appropriate agency (USFWS and/or CDFW) within 48 hours of the discovery any unauthorized take of a federally listed or state-listed endangered or threatened species.

The following mitigation measure numbers/letters have been corrected:

- ***Mitigation Measure 3.3-9~~d~~c:*** Implement a training program for construction and project personnel.

- ***Mitigation Measure 3.3-9~~e~~d:*** Provide funding for raptor recovery and rehabilitation.

- ***Mitigation Measure 3.3-9~~f~~e:*** Reduce vehicle collision risks to wildlife.

- ***Mitigation Measure 3.3-9~~g~~f:*** Secure an eagle incidental take permit for Solano 4 Wind from USFWS and implement permit conditions.
- ***Mitigation Measure 3.3-9~~h~~g:*** Implement adaptive management to address disproportionate mortality of special-status birds or bats.

3.4 Revisions to Cultural Resources

The following minor revision has been made to clarify Mitigation Measure 3.4-1a and avoid any ambiguity about how the mitigation would be implemented. The minor revision in no way changes the impact conclusions presented in the Draft EIR; therefore, recirculation of the EIR is not required.

> ***Mitigation Measure 3.4-1a: Avoid or conduct subsurface testing and/or monitoring during construction in areas with high potential for the presence of buried archaeological sites.***
>
> The construction contractor shall avoid conducting ground-disturbing activities in the few locations within the direct APE that have high or the highest potential for buried archaeological sites. If these areas cannot be avoided and project-related ground disturbance in those areas would be sufficiently deep that they could encounter buried archaeological resources, then additional actions may be necessary to mitigate any impacts on as-yet unidentified buried resources. These minimization efforts could include conducting subsurface testing before project construction and/or monitoring during the construction period. In the event that a historic-period archaeological site (such as concentrated deposits of bottles or bricks with makers marks, amethyst glass, or other historic refuse) is uncovered during grading or other construction activities, all ground-disturbing activity within 100 feet of the discovery shall be halted until a qualified archaeologist can assess the significance of the find. SMUD will be notified of the potential find and a qualified archeologist shall be retained to investigate its significance. Any previously undiscovered resources found during construction will be recorded on appropriate California Department of Parks and Recreation 523 forms and evaluated for significance under all applicable regulatory criteria. If the archaeologist determines that the find does not meet the CRHR standards of significance for cultural resources, construction may proceed. If the find is determined to be significant by the qualified archaeologist (i.e., because the find is determined to constitute either a historical resource or a unique archaeological resource), the archaeologist shall work with SMUD to follow accepted professional standards such as further testing for evaluation or data recovery, as necessary. If artifacts are recovered from significant historic-period archaeological resources, they shall be housed at a qualified curation facility. The results of the identification, evaluation, and/or data recovery program for any unanticipated discoveries shall be presented in a professional-quality report that details all methods and findings, evaluates the nature and significance of the resources, analyzes and interprets the results.

3.5 Revisions to Transportation and Traffic

The following minor revision has been made to clarify Mitigation Measure 3.11-2 and avoid any ambiguity about whether the mitigation will be implemented. The minor revision in no way changes the impact conclusions presented in the Draft EIR; therefore, recirculation of the EIR is not required.

> ***Mitigation Measure 3.11-2: Monitor the physical condition of roadway segments along primary access routes to the project site and restore the physical condition of affected roadways to the extent damaged by the project.***
>
> SMUD or its construction contractor will conduct a preconstruction survey and assessment of existing pavement conditions along SR 12 east, Shiloh Road, Collinsville Road, Talbert Lane, Stratton Road, Birds Landing Road, and Montezuma Hills Road. If the preconstruction pavement conditions are deficient, the preconstruction pavement analysis shall establish the baseline for required improvements. If the preconstruction pavement conditions are acceptable, improvements shall be required only if the postconstruction pavement condition is deficient, and only to the extent that the project demonstrably contributed to such deficiencies. If deficient following construction, any segments of SR 12 east and Shiloh Road, Collinsville Road, Talbert Lane, Stratton Road, Birds Landing Road, and Montezuma Hills Road that are affected by the project shall be returned to preconstruction conditions after construction. Implementing this measure will ensure that construction activities will not worsen pavement conditions, relative to existing conditions.
>
> Before construction, SMUD will ~~make a good-faith effort to~~ enter into mitigation agreements with Caltrans (for SR 12 east) and Solano County (for Shiloh Road, Collinsville Road, Talbert Lane, Stratton Road, Birds Landing Road, and Montezuma Hills Road) to verify the location, extent, timing, and fair-share cost to be paid by SMUD for any necessary pre- and postconstruction physical improvements. The fair-share amount will be either the cost to return the affected roadway segment to its preconstruction condition or a contribution to programmed planned improvements. Repairs may include overlays or other surface treatments.

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4 Mitigation Monitoring and Reporting Program

This mitigation monitoring and reporting program (MMRP) summarizes the mitigation measures, implementation schedule, and responsible parties for monitoring the mitigation measures required of the proposed Solano 4 Wind Project, as set forth in the EIR prepared for the project.

Section 21081.6 of the California Public Resources Code and Section 15091(d) and Section 15097 of the State CEQA Guidelines require public agencies "to adopt a reporting or monitoring program for changes to the project which it has adopted or made conditions of project approval to mitigate or avoid significant effects on the environment." An MMRP is required for the project because the EIR for the project identified potentially significant adverse impacts related to construction and operation of the project, and mitigation measures have been identified to reduce most of those impacts to a less-than-significant-level.

This MMRP will be adopted by SMUD if it approves the project and will be kept on file at SMUD's Customer Service Center at 6301 S Street, Sacramento, CA 95817; and at SMUD's East Campus Operations Center at 4401 Bradshaw Road, Sacramento, CA 95827. SMUD will use this MMRP to ensure that identified mitigation measures, adopted as a condition of project approval, are implemented appropriately.

4.1 Mitigation Implementation and Monitoring

SMUD shall be responsible for monitoring the implementation of mitigation measures designed to minimize impacts associated with the project. Allthough SMUD shall have ultimate responsibility for ensuring implementation, others may be assigned the responsibility of actually implementing the mitigation. SMUD shall retain the primary responsibility for ensuring that the project meets the requirements of this MMRP and other permit conditions imposed by participating regulatory agencies.

SMUD shall designate specific personnel who will be responsible for monitoring implementation of the mitigation that will occur during project construction. The designated personnel will be responsible for submitting documentation and reports to SMUD on a schedule consistent with the mitigation measure and in a manner necessary for demonstrating compliance with mitigation requirements. SMUD shall ensure that the designated personnel have authority to require implementation of mitigation requirements and shall be capable of terminating project construction activities found to be inconsistent with mitigation objectives or project approval conditions.

SMUD and its appointed contractor also shall be responsible for ensuring that its construction personnel understand their responsibilities for adhering to the performance requirements of the mitigation plan and other contractual requirements related to the implementation of mitigation as part of project construction. In addition to the prescribed mitigation measures, Table 4-1 lists each identified environmental resource being affected (in the same order and using the same numbering system as in the EIR), the associated CEQA checklist question (used as the thresholds of significance in the EIR), the corresponding monitoring and reporting requirement, the party responsible for

ensuring implementation of the mitigation measure and monitoring effort, and the project component to which the mitigation measure applies.

If an issue addressed in the EIR does not result in mitigation, it is not included in the table.

4.2 Mitigation Enforcement

SMUD shall be responsible for enforcing mitigation measures. If alternative measures are identified that would be equally effective in mitigating the identified impacts, implementation of these alternative measures will not occur until agreed on by SMUD.

4.3 Reporting

SMUD shall, or may require the developer to, prepare a monitoring report on completion of the project describing the compliance of the activity with the required mitigation measures. Information regarding inspections and other requirements will be compiled and explained in the report. The report will be designed to simply and clearly identify whether mitigation measures have been adequately implemented. At a minimum, each report will identify the mitigation measures or conditions to be monitored for implementation, whether compliance with the mitigation measures or conditions has occurred, the procedures used to assess compliance, and whether further action is required. The report will be presented to SMUD's Board of Directors.

4.4 Mitigation Monitoring and Reporting Program Table

The categories identified in Table 4.1 are described below.

Issue Area – This column identifies which CEQA issue area the mitigation measure is attributed to in the EIR.

Impacts – This column provides the potential impacts summary.

Mitigation Measure – This column provides the verbatim text of the adopted mitigation measure.

Implementation Duration – This column identifies when the mitigation measure will be implemented (e.g., before construction, during construction, during operations-maintenance, during decommissioning).

Monitoring Duration – This column identifies the period within which monitoring will be conducted.

Responsibility – This column identifies the party(ies) responsible for implementation and/or enforcing compliance with the requirements of the mitigation measure.

Applicable Project Component – This column identifies with what component or under what conditions the mitigation measure will be implemented (e.g., all project components, during high wind conditions, construction within wetlands).

Table 4-1 Summary of Impacts and Mitigation Measures

CEQA Issue Area	Impacts	Mitigation Measures	Implementation Duration	Monitoring Duration	Responsibility		Applicable Project Component
					Implementation	Monitoring	
Aesthetics	**Impact 3.1-1: Project impacts on scenic vistas and potential for substantial degradation of existing visual character or quality of public views of the site and surroundings, including those within the viewshed of a state or locally designated scenic highway.**	**Mitigation Measure 3.1-1a: Design the Project to Avoid Aesthetic Impacts.** SMUD or its contractor shall consider topography when siting wind turbines and shall avoid major modifications to natural landforms or other characteristic parts of the landscape. The turbines shall be clustered or grouped to break up overly long lines of turbines. The turbines shall be similar in shape and size. Each WTG shall be painted a uniform white or light-grey color, "RAL 7035" or similar, per manufacturer's requirements. To minimize the structures' reflectivity, the paint used shall have a gloss level that does not exceed 30 percent, or 60–70 gloss units,[1] as calculated by the manufacturer. The surfaces of all other structures (e.g., meteorology towers) shall be given low-reflectivity finishes with neutral colors to minimize the contrast of the structures with their backdrops. Fewer, larger turbines shall be preferred over more, smaller turbines. Commercial messages and symbols shall be prohibited on wind turbines. Collection and home run lines shall be underground; no overhead collection of home run lines shall be used. To minimize ground disturbance, to the extent feasible, existing roadways shall be used to access turbine pads. All construction-related areas shall be kept clean and tidy, with construction materials and equipment stored in the construction staging and laydown areas and/or generally away from public view. SMUD or its contractor shall remove construction debris promptly at intervals of 2 weeks or less, at any one location.	Before and during construction All construction debris shall be removed promptly at intervals of 2 weeks or less, at any one location.	During construction	SMUD and Contractor	SMUD	All project components
Aesthetics	**Impact 3.1-1: Project impacts on scenic vistas and potential for substantial degradation of existing visual character or quality of public views of the site and surroundings, including those within the viewshed of a state or locally designated scenic highway.**	**Mitigation Measure 3.1-1b: Implement Operational Measures to Reduce Aesthetic Impacts.** Wind turbines shall be kept clean and in good repair. Nacelle covers and rotor nose cones shall always be maintained in place and undamaged. Inoperative turbines shall be repaired, replaced, or removed as quickly as feasible because a turbine that is broken or disabled will create a health and safety hazard and disrupt the visual experience of the casual observer. SMUD or its contractor shall remove derelict WTGs and derelict parts and pieces. Similarly, operations and maintenance areas shall be kept clean and tidy, with all equipment, parts, and supplies stored in areas that are screened from view and/or are generally not visible to the general public. Grading and landscape treatment around tower foundations shall match the conditions of surrounding landscape and habitat to recreate a pleasing visual environment.	During construction, operation-maintenance, and maintenance	During construction, operation, and maintenance	SMUD and/or Contractor	SMUD	All project components
Aesthetics	**Impact 3.1-2: Creation of new sources of substantial light or glare that would adversely affect day or nighttime views in the area.**	**Mitigation Measure 3.1-2: Use Technology to Reduce Night Sky Impacts.** To reduce the potential for visual impacts associated with lighting, lighting for the turbine doorways shall be limited to the illumination required for safety of personnel and security of project infrastructure. To minimize the effect of light pollution in the surrounding area, all lighting shall be motion-activated and downcast. To minimize night sky impacts from hazard navigation lighting associated with wind facilities, ADLS technology will be employed as described in the FAA Determination of No Hazard. ADLS is a radar-based obstacle avoidance system that activates obstruction lighting and audio signals only when an aircraft is close to an obstruction on which an ADLS unit is mounted, such as a wind turbine.	During construction and operation-maintenance	During construction and operation	Contractor	SMUD	Turbines and associated facilities (i.e. meteorological towers).
Air Quality	**Impact 3.2-1: Project construction activities would emit NO_X and PM_{10} at levels that could exceed YSAQMD and BAAQMD daily**	**Mitigation Measure 3.2-1: Reduce construction-related exhaust and dust emissions.** The construction contractor shall prepare a fugitive dust control plan for the project's construction phases. Before the start of construction, the plan shall be submitted to YSAQMD and BAAQMD for review and approval. The fugitive dust control plan shall include but not be limited to the following measures for all construction phases to reduce fugitive dust emissions and emissions of PM and NO_X exhaust:	Submit FDCP prior to start of construction to YSAQMD and BAAQMD for review and approval;	Before and during construction	Contractor	SMUD	All project components

[1] Gloss units is a measurement scale based on a highly polished reference black glass standard with a refractive index of 100 gloss units at the specified angle of measurement. A measurement of 70 gloss units represents a low-gloss condition.

Table 4-1 Summary of Impacts and Mitigation Measures

CEQA Issue Area	Impacts	Mitigation Measures	Implementation Duration	Monitoring Duration	Responsibility		Applicable Project Component
					Implementation	Monitoring	
	emissions thresholds for these pollutants.	Fugitive Dust Control Plan • All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered at a frequency adequate to maintain minimum soil moisture of 12 percent (at least two times per day). Moisture content can be verified by lab samples or moisture probe. • All haul trucks transporting soil, sand, or other loose material off-site shall be covered. • All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited. • All vehicle speeds on unpaved roads shall be limited to 15 miles per hour. • All roadways, driveways, and wind turbine generator foundations and work areas to be paved or graveled shall be completed as soon as possible. These areas shall be paved or graveled as soon as possible after grading unless seeding or soil binders are used. No recycled concrete will be utilized on the roadways. • Idling times shall be minimized either by shutting equipment off when not in use or by reducing the maximum idling time to 2 minutes. Clear signage shall be provided for construction workers at all access points. • All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition before operation. • A publicly visible sign shall be posted identifying the name and telephone number of the person to contact at SMUD regarding dust complaints. This person shall respond and take corrective action within 48 hours. The air districts' phone numbers shall also be visible to ensure compliance with applicable regulations. • All excavation, grading, and/or demolition activities shall be suspended when average wind speeds exceed 20 miles per hour. • Vegetative ground cover (e.g., fast-germinating native grass seed) shall be planted in disturbed areas as soon as possible and watered appropriately until vegetation is established. • The simultaneous occurrence of excavation, grading, and ground-disturbing construction activities on the same area at any one time shall be limited. Activities shall be phased to reduce the surface area disturbed at any one time. • All trucks and equipment, including their tires, shall be washed off before leaving the site. • Site access areas shall be covered with a 6- to 12-inch compacted layer of wood chips, mulch, or gravel to a distance of 100 feet from the paved road. • Sandbags or other erosion control measures shall be installed to prevent silt runoff to public roadways from sites with a slope greater than 1 percent. • The project shall develop a plan demonstrating that off-road equipment exceeding 50 horsepower) to be used in the construction project (owned, leased, and subcontractor vehicles) would achieve project-wide, fleet-average emissions reductions of 20 percent for NO_X and 45 percent for PM, compared to the most recent ARB fleet average. Acceptable options for reducing emissions include the use of late-model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, add-on devices such as particulate filters, and/or other options as they become available. • Low-VOC (i.e., ROG) coatings shall be used beyond local requirements (Regulation 8, Rule 3, "Architectural Coatings").	implement the FDCP during construction.				

Table 4-1 Summary of Impacts and Mitigation Measures

CEQA Issue Area	Impacts	Mitigation Measures	Implementation Duration	Monitoring Duration	Responsibility		Applicable Project Component
					Implementation	Monitoring	
		• All construction equipment, diesel trucks, and generators shall be equipped with best available control technology for reduction of NO_X and PM emissions. • All contractors shall use equipment that meets ARB's most recent certification standard for off-road heavy-duty diesel engines (BAAQMD 2017:Tables 8-2 and 8-3).					
Biological Resources	**Impact 3.3-1: Temporary and permanent construction impacts on special-status amphibians and reptiles.**	**Mitigation Measure 3.3-1a: Avoid and minimize impacts on California tiger salamander.** SMUD will implement the following measures to avoid and minimize potential construction impacts on California tiger salamander: • A qualified California tiger salamander biologist (defined as an individual with 3 years of experience conducting surveys for California tiger salamander and habitat in the project region) will be present on-site to conduct monitoring during project construction and decommissioning activities that disturb surface soils within 250 feet of drainages or any other aquatic features identified as suitable for California tiger salamander (AECOM 2018b). • SMUD will confine all project-related parking, storage areas, laydown sites, equipment storage, and any other surface-disturbing activities to previously disturbed areas or areas that are not suitable habitat for California tiger salamander (AECOM 2018b). To the extent it is not possible to limit such activities to previously disturbed areas or areas that are not suitable habitat for California tiger salamander, the qualified biologist will perform a preconstruction survey within 48 hours before constructing project-related parking, storage areas, laydown sites, and equipment storage sites to ensure California tiger salamander are not present. If a California tiger salamander is found within the project area, SMUD will implement any actions necessary to avoid take of California tiger salamander, including establishing appropriate buffer area and exclusion fencing in consultation with USFWS and/or CDFW. If after avoidance measure cannot avoid take, SMUD shall seek an Incidental Take Permit from USFWS and/or CDFW, as appropriate, and implement any measures specified therein to reduce chances of take and minimize and fully mitigate any incidental take (including the measures in this MM 3.3-1a). • All steep-walled holes or trenches that are 1 foot deep or greater and located within 250 feet of aquatic habitat that is suitable for CTS will have at least one escape ramp constructed of earthen fill or wooden planks. All such holes or trenches will be completely covered before sunset of each workday using boards or metal plates that are placed flush to the ground, and will be inspected before the start of daily construction activities. • To prevent inadvertent entrapment of California tiger salamanders during project construction, maintenance, and decommissioning, all construction pipes, culverts, conduits, and other similar structures stored on-site overnight will be inspected before the structure is buried. Plastic monofilament netting will not be used for sediment control because it could pose an entrapment hazard to California tiger salamanders and other wildlife.	Qualified biologist to monitor during construction and decommissioning activities that disturb surface soils within 250 ft of drainages or other aquatic features. Ramp trenches or holes before sunset each workday and inspect before start of daily construction. Inspect pipes, culverts, conduits, etc. stored overnight before buried. Avoidance and minimization measures to be implemented during construction, operation-maintenance, and decommissioning.	During construction, operation, and decommissioning	Qualified Biologist and Contractor	SMUD	All project components near suitable habitat for CTS
Biological Resources	**Impact 3.3-1: Temporary and permanent construction impacts on special-status amphibians and reptiles.**	**Mitigation Measure 3.3-1b: Develop and implement a worker environmental awareness program.** Before the start of any construction activity, SMUD will develop a worker environmental awareness program that will be provided to all personnel working on the project site during construction and operation. Training materials and briefings will include but not be limited to the following elements: • A discussion of applicable requirements established by the following laws and regulations, consequences of noncompliance, and the specific conditions of permits obtained for the project from regulatory agencies (USACE, the RWQCB, USFWS, and CDFW) under these laws and regulations: • the federal ESA and CESA; • the Bald and Golden Eagle Protection Act; • the Migratory Bird Treaty Act;	SMUD to develop worker environmental awareness program (WEAP) before construction. Provide WEAP to all personnel working on project site during construction, operation-	During construction, operation-maintenance, and decommissioning	Qualified Biologist and Contractor	SMUD	All project components

Table 4-1 Summary of Impacts and Mitigation Measures

CEQA Issue Area	Impacts	Mitigation Measures	Implementation Duration	Monitoring Duration	Responsibility		Applicable Project Component
					Implementation	Monitoring	
		• the Clean Water Act; • Sections 3503, 3503.5, 3511, 3513, 3800(a), 4150, 4700, 5050, 5515, and 1602 of the California Fish and Game Code; • California Code of Regulations Title 14, Sections 30.10 and 251.1; • the Porter-Cologne Water Quality Control Act; • Sections 5004 and 7201 of the CDFA Code; and • California Coastal Act. • Information about workers' responsibilities with regard to California tiger salamander, an overview of the species' appearance and habitat, and a description of the measures being taken to reduce potential effects on the species during project construction. • Identification and values of the special-status plant and wildlife species to be protected by the project; identification of important wildlife habitat and sensitive natural communities to be protected; and identification of special-status species, life history descriptions, habitat requirements during various life stages, and the species' protected status. • Fire protection measures, measures to avoid introduction and minimize the spread of invasive weeds during construction and operation; procedures for managing trash and food waste to prevent attracting corvids or nuisance wildlife to the site; and procedures for preventing and containing spills of hazardous substances. SMUD will conduct the worker-training program for new employees coming on the project site before the start of any construction, maintenance, or decommissioning activity that would disturb surface soils. SMUD will ensure that all personnel working on-site receive the training, including construction contractors and personnel who will operate and maintain project facilities. The training program will be recorded and subsequently shown to any project personnel who are unable to attend the initial training program. If a California tiger salamander, alive or dead, is encountered (i.e., observed, killed, or otherwise taken) at any location on the project site during the project's lifetime, SMUD will notify USFWS and CDFW on the same day as the detection. Project personnel will not move the salamander encountered unless instructed to do so by USFWS and CDFW. If instructed to move the California tiger salamander by USFWS, a USFWS-approved and permitted biologist will carefully relocate the salamander by hand to a suitable, nearby active burrow system (e.g., for Botta pocket gopher or California ground squirrel) outside the area where project activities could injure or kill the animal. (The USFWS-approved and permitted biologist will be an individual with a Section 10[a][1][A] handler's permit for California tiger salamander.) The qualified biologist will monitor the rescued California tiger salamander until it enters the burrow. In addition to the measures described above, SMUD will implement the following measures, listed after Impact 3.3-13 below, to protect water quality and drainages during construction: • Mitigation Measure 3.3-13a, "Avoid and Minimize Impacts on Wetlands and Other Waters of the United States" • Mitigation Measure 3.3-13b, "Avoid and Minimize Potential Effects on Waters of the United States Associated with Installation of Access Road Culvert Crossings" • Mitigation Measure 3.3-13c, "Comply with Section 1602 Streambed Alteration Agreement" • Mitigation Measure 3.3-13d, "Avoid and Minimize Potential Effects on Waters of the United States from Horizontal Directional Drilling"	maintenance, and decommissioning. Ongoing WEAP training. SMUD will notify USFWS and CDFW (on the same day) if a CTS is detected (dead or alive) and follow agency directions.				

Table 4-1 Summary of Impacts and Mitigation Measures

CEQA Issue Area	Impacts	Mitigation Measures	Implementation Duration	Monitoring Duration	Responsibility		Applicable Project Component
					Implementation	Monitoring	
Biological Resources	**Impact 3.3-2: Construction impacts on nesting birds (nonraptors).**	**Mitigation Measure 3.3-2: Avoid impacts on nesting birds.** In addition to Mitigation Measure 3.3-1b, "Develop and Implement a Worker Environmental Awareness Program," and measures for biological monitors, SMUD will implement the following measures to avoid directly or indirectly affecting nesting birds during project construction: • SMUD will conduct preconstruction nesting bird surveys to locate all active nests of special-status birds and birds protected under the MBTA and California Fish and Game Code Sections 3503 and 3503.5. No more than one week before any construction activities occur during the nesting season (February 1–August 31), including vegetation removal if necessary, a qualified biologist shall conduct nesting bird surveys to identify any nests within 100 feet of proposed work areas. The qualified biologist is defined as an individual knowledgeable about the distribution, habitat, life history, and identification of Northern California birds, and with 3 years of experience in nest searching for birds that may be present in the project area. • If nests are detected during the preconstruction surveys, a 100-foot exclusion zone will be established around the nest in which no work will be allowed until the young have successfully fledged or nesting activity has ceased. The qualified biologist will make the determination of fledging or cessation of nesting. In consultation with a qualified avian biologist, USFWS, and CDFW, the size of the exclusion zone may be modified depending on the species and the type of construction activity and associated disturbance anticipated near the nest.	Preconstruction surveys 1 week or less before construction during nesting season (Feb 1 – Aug 31). Establish 100-ft buffers around nests and monitor during construction. Buffers may be modified in consultation with avian biologist, USFWS, and CDFW.	Before and during construction	Qualified Biologist and Contractor	SMUD, CDFW and USFWS	All project components
Biological Resources	**Impact 3.3-4: Construction impacts on raptor nesting activity.**	**Mitigation Measure 3.3-4a: Avoid and minimize impacts on nesting raptors.** SMUD will implement the following measures to avoid and minimize impacts on nesting raptors: • If construction activities are scheduled to occur during the breeding season (February 1–August 31), SMUD will conduct preconstruction surveys in all potential suitable raptor nesting habitat within 0.25 mile of proposed construction areas, including trees, shrubs, grasslands, and wetland vegetation. A qualified wildlife biologist shall determine the timing of preconstruction surveys based on the time of year and habitats that are present, and shall conduct the surveys no more than 30 days before construction. The 30-day survey period allows flexibility in order for surveys to be conducted when the likelihood of nest detection is maximized (e.g., during courtship, nest building, or when feeding young). • SMUD will conduct nesting surveys for Swainson's hawks in accordance with the Swainson's Hawk Technical Advisory Committee (TAC) guidance published in 2000 (Recommended Timing and Methodology for Swainsons' Hawk Nesting Surveys in California's Central Valley). These methods will require surveys to start early in the nesting season (late March to early April). Surveys will be conducted within a minimum 0.25-mile radius of the project area or a larger area if necessary to identify potentially active nests potentially affected by project construction. As required by the TAC guidance, surveys will be conducted for at least two survey periods in the nesting season, immediately before the start of project construction activities. The qualified biologist conducting the surveys will have a minimum of 2 years of experience in implementing the TAC survey methodology. • SMUD will maintain no-disturbance buffers around active raptor nests during the breeding season, or until it is determined the young have fledged. The no-disturbance zone shall include a 500-foot buffer around all raptor nests (including owls) and a 0.25-mile buffer for any active Swainson's hawk nests. o No-disturbance buffer sizes for non-special-status species raptors may be increased or decreased by a qualified biologist based on the sensitivity of the species of raptor, or based on site conditions that affect disturbance, such as the type of work, vegetation structure or density, and the line of sight between construction work and the nest to nesting raptors. o No-disturbance buffer sizes for special-status raptor species may be increased or decreased by the qualified biologist in consultation with USFWS and CDFW as appropriate.	Preconstruction surveys in all potential suitable raptor nesting habitat within 0.25 mile of proposed construction areas, including trees, shrubs, grasslands, and wetland vegetation, if construction occurs Feb 1 – Aug 31. No-disturbance zone of 500-foot buffer around all raptor nests (including owls) and a 0.25-mile buffer for any active Swainson's hawk nests.	Before and during construction	Qualified Biologist and Contractor	SMUD and CDFW	All project components within suitable habitat for nesting raptors

Table 4-1 Summary of Impacts and Mitigation Measures

CEQA Issue Area	Impacts	Mitigation Measures	Implementation Duration	Monitoring Duration	Responsibility		Applicable Project Component
					Implementation	Monitoring	
		○ Buffers will not apply to construction-related traffic using existing roads that are not limited to project-specific use (e.g., county roads, highways, farm roads). ○ If no nests are observed during the preconstruction survey but nesting occurs after the start of construction, it will be assumed that the individuals are acclimated to the level of ongoing disturbance. • SMUD will clearly identify the locations of no-disturbance buffers (e.g., 250 feet, 500 feet, or 0.25 mile) on maps that will be made available to construction crews. • Before and during construction, a qualified biologist shall identify all active nest setback areas on construction drawings, and if appropriate, shall flag or fence the setback areas. • If construction is scheduled to occur during the non-nesting season, then no nesting bird surveys are required before construction activity begins, except provisions for surveys for burrowing owls outside the nesting season (September 1–January 31), as specified below in Mitigation Measure 3.3-4b.					
Biological Resources	**Impact 3.3-4: Construction impacts on raptor nesting activity.**	**Mitigation Measure 3.3-4b: Avoid and minimize impacts on burrowing owls.** To avoid and minimize impacts on burrowing owls, SMUD will implement the following guidelines adapted from the CDFW *Staff Report on Burrowing Owl Mitigation* (CDFG 2012): • SMUD will have preconstruction burrowing owl surveys conducted in all areas that may provide suitable nesting habitat according to CDFW (CDFG 2012) guidelines. A qualified wildlife biologist shall conduct take avoidance surveys, including documentation of burrows and burrowing owls, in all suitable burrowing owl habitat within 500 feet of proposed construction. The take avoidance surveys, consisting of up to four visits, shall be initiated within 30 days of and completed at least 14 days before construction is initiated at a given location. In areas with burrows or refuge that could potentially support burrowing owls, a clearance visit shall be conducted within 24 hours of construction, including when construction work is reinitiated after a lapse of two or more weeks. • SMUD will avoid disturbing active western burrowing owl nests and occupied nesting burrows. ○ In accordance with standard CDFW mitigation guidelines, SMUD and its construction contractor will avoid disturbance at occupied burrows in accordance with the following seasonal distance buffers for low, medium, and high levels of disturbance (CDFG 2012): ▪ April 1 – August 15: 200 m (low), 500 m (medium), and 500 m (high) ▪ August 16 – October 15: 200 m (low), 200 m (medium), and 500 m (high) ▪ October 16 – March 31: 50 m (low), 100 m (medium), and 500 m (high) ○ These distances may be increased or decreased if, as determined by a qualified biologist, a different distance is required to ensure construction activities will not adversely affect occupied burrows or disrupt breeding behavior. • If a qualified biologist, in consultation with CDFW, determines that construction could adversely affect occupied burrows during the September 1–January 31 nonbreeding season, SMUD shall consult with CDFW to determine if passive relocation using one-way doors, in accordance with guidelines prepared by the California Burrowing Owl Consortium (CDFG 2012), should be implemented, and if off-site compensatory mitigation is required to offset habitat loss. Compensatory mitigation for loss of burrowing owl habitat would require protection of suitable mitigation lands in perpetuity at a minimum 3:1 mitigation ratio.	Preconstruction surveys in suitable habitat before construction (up to 4 visits, initiated within 30 days of and completed at least 14 days before construction begins in a given area). Clearance visit required 24 hours before construction in areas potentially supporting burrowing owls and when construction work is reinitiated after a lapse of 2 or more weeks. Implement applicable seasonal distance buffers for low, medium, or high levels of disturbance. Passive relocation if necessary, during Sept 1 – Jan 31 in consultation with CDFW.	Before and during construction	Qualified Biologist and Contractor	SMUD and CDFW	All project components within suitable habitat for burrowing owls
Biological Resources	**Impact 3.3-5: Removal and modification of raptor nesting, foraging,**	**Mitigation Measure 3.3-5: Acquire off-site mitigation to replace lost raptor foraging habitat.**	Before construction	N/A	SMUD	Mitigation Management Organization	Foraging habitat for Swainson's hawk

Table 4-1 Summary of Impacts and Mitigation Measures

CEQA Issue Area	Impacts	Mitigation Measures	Implementation Duration	Monitoring Duration	Responsibility		Applicable Project Component
					Implementation	Monitoring	
	and roosting habitat during construction.	SMUD will implement the following compensatory mitigation to offset net impacts on foraging habitat for breeding Swainson's hawks and other raptor species. Based on Swainson's hawk nest locations documented in recent years, no permanent project impacts on foraging habitat will occur within 1 mile of an active Swainson's hawk. Depending on whether the 150m WTG option or the 136m WTG option is selected, 25.38 acres or 30.49 acres of suitable Swainson's hawk foraging habitat will be required to mitigate this loss. SMUD will mitigate the loss of Swainson's hawk foraging habitat in accordance with CDFW recommendations (DFG 1994) by providing mitigation lands as follows: • Foraging habitat permanently lost within 5 miles of an active Swainson's hawk nest tree but more than 1 mile from the nest tree (either 25.38 acres or 30.49 acres, depending on the WTG option selected) will be replaced with 0.75 acre of mitigation land for each acre of foraging habitat permanently lost because of project construction (0.75:1 ratio). This ratio is consistent with recommendations in DFG 1994: "Projects within 5 miles of an active nest tree but greater than 1 mile from the nest tree shall provide 0.75 acres of habitat mitigation land for each acre of urban development authorized [0.75:1])." All mitigation lands protected under this requirement shall be protected in perpetuity in a form acceptable to CDFW (e.g., through fee title acquisition or conservation easement) on agricultural lands or other suitable habitats that provide foraging habitat for Swainson's hawk. The easement will be held by a governmental entity, special district, non-profit organization , for-profit entity, person, or another entity, to hold title to and manage the property provided that the district, organization, entity, or person meets the requirements of Sections 65965–65968 of the Government Code, as amended. As the State's trustee for fish and wildlife resources, CDFW is to be named as a third-party beneficiary under the conservation easement. SMUD will consult with CDFW in determining the suitability of the proposed mitigation lands to offset impacts of the project on Swainson's hawk foraging habitat. • Management authorization holders/project sponsors will provide for management of the mitigation lands in perpetuity by funding a management endowment.		Management of the mitigation lands will be monitored in perpetuity by funding a management endowment			
Biological Resources	**Impact 3.3-6: Construction impacts on bald and golden eagle nesting activity.**	**Mitigation Measure 3.3-6: Avoid and minimize impacts on nesting eagles.** SMUD will implement the following measures to avoid and minimize impacts on nesting eagles: • Ground-based surveys will be conducted to assess the status of all previously documented eagle nest locations (CNDDB or other reliable sources) within the 2-mile buffer of the project area, and will follow guidance set forth in USFWS (2013) for ground-based surveys to determine occupancy, including the following site-specific recommendations: ○ Two 4-hour observations shall be conducted at each nest (multiple nests may be observed simultaneously), one in late January and the other in late February, to determine whether territories are occupied by adult eagles and identify nesting activity where possible. ○ If an active nest is located, no further ground monitoring is required. However, if nesting behavior is observed within 2 miles of the project buffer and a nest site is not located, an aerial inspection of the area shall be conducted. ○ The results of the surveys shall be documented in a report and submitted to USFWS and CDFW no later than August of the breeding season in which the survey was conducted (e.g., August 2020 for winter/spring 2020 surveys). SMUD will implement the following avoidance buffer distances for bald eagle and golden eagle (respectively) for the indicated construction activity, assuming a direct line of sight between the construction activity and the active nest: • Human foot traffic: 400 meters/800 meters • Pass-through vehicular traffic: 200 meters/400 meters	Preconstruction surveys and research before construction. Nest surveys in Jan and Feb. Results of surveys to be submitted to USFWS and CDFW no later than Aug of the breeding season in which the survey was conducted (e.g., Aug 2020 for winter/spring 2020 surveys). SMUD to implement avoidance buffer distances for bald eagle and golden eagle nests.	Before and during construction.	Qualified Biologist and Contractor	SMUD, USFWS, CDFW	All project components within nest buffers

Table 4-1 Summary of Impacts and Mitigation Measures

CEQA Issue Area	Impacts	Mitigation Measures	Implementation Duration	Monitoring Duration	Responsibility		Applicable Project Component
					Implementation	Monitoring	
		• Any other construction work except the types described below: 800 meters/1,600 meters • Blasting: 1,600 meters for both species • Helicopter flight: 1,600 meters (horizontal and vertical) for both species Active eagle nests and associated buffers will be indicated in construction drawings for the project and will be discussed in the worker environmental awareness program training for construction workers (Mitigation Measure 3.3-1b).	Ongoing WEAP training.				
Biological Resources	**Impact 3.3-7: Removal and modification of golden eagle foraging habitat during construction.**	**Mitigation Measure 3.3-7: Implement Mitigation Measure 3.3-5.** SMUD will implement Mitigation Measure 3.3-5, "Acquire Off-site Mitigation to Replace Disturbed Raptor Foraging Habitat," listed above.	See MM 3.3-5	See MM 3.3-5	See MM 3.3-5	See MM 3.3-5	See MM 3.3-5

Biological Resources	**Impact 3.3-9: Injury to and mortality of raptors, other birds, and bats from project operation.**	**Mitigation Measure 3.3-9a: Avoid and minimize operational impacts on birds and bats.**
		SMUD will design and operate the project to minimize potential operational impacts on birds and bats by adhering to impact avoidance and minimization measures, including those described the *SMUD Solano Wind* Bird *and Bat Conservation Strategies* (SMUD 2013), and SMUD's Eagle Conservation Plan (SMUD 2014). These measures include the following:
		• Maintain a landscape that does not encourage bird or bat occurrence by conducting regular rotational agricultural activities to keep rodent prey populations to relatively low levels. In addition, implement a prey management program to reduce the availability of rabbits, ground squirrels, and other prey that could attract eagles and other raptors.
		• Adhere to the general guidelines for turbine and WTG tower design and operation to minimize bird and bat mortality:
		  ○ Use turbines and WTG tower designs lacking potential raptor perches that may encourage bird activity near the moving rotors.
		  ○ Use turbines with rotor tips at least 25 meters, preferably 30 meters, above the ground.
		• Avoid guy wires on meteorological towers.
		• Select WTG sites using the following guidelines designed to minimize the extent of potential avian and bat mortality:
		  ○ Minimize the density of WTGs on the landscape and avoid placing WTGs close together in long strings, which creates barriers to movement by restricting the available space for birds and bats to negotiate through a WTG field.
		  ○ Establish setbacks from roads, residences, and wetlands and other unique habitats where birds and bats are more likely to congregate.
		  ○ Where possible, avoid steep slopes, canyons, saddles, and other high-risk topographic features.
			Before and during construction-maintenance, and decommissioning	Before and during construction-maintenance, and decommissioning	SMUD and Contractor	SMUD	All project components

Biological Resources	**Impact 3.3-9: Injury to and mortality of raptors, other birds, and bats from project operation.**	**Mitigation Measure 3.3-9b: Conduct bird and bat mortality monitoring.** To assess operational impacts on birds and bats and inform potential adaptive management and mitigation approaches, SMUD will conduct 1 year of postconstruction mortality monitoring in the project area, as follows: • Qualified biologists shall monitor bird and bat mortality annually throughout the project area in accordance with the requirements set forth below, which incorporate guidelines described in SMUD's Solano BBCS (SMUD 2013), SMUD's *Final Eagle Conservation Plan* (SMUD 2014), and the *California Guidelines for Reducing Impacts to Birds and Bats from Wind Energy Development* (CEC and DFG 2007). The monitoring shall be conducted so that sufficient information is available to allow evaluation of WTG design characteristics and location effects that contribute to mortality, including information about	For 1 year during operation. An annual report will be prepared each year and a final report will be prepared after the 1-year monitoring period.	Each month for 1 year; thereafter an annual "clean sweep" around all Solano 4 turbines will be conducted each subsequent calendar year for the life of the project	Qualified biologists and SMUD	SMUD	All project turbines and roads

Table 4-1 Summary of Impacts and Mitigation Measures

CEQA Issue Area	Impacts	Mitigation Measures	Implementation Duration	Monitoring Duration	Responsibility		Applicable Project Component
					Implementation	Monitoring	
		the species, number, location, and distance of dead birds relative to WTG locations; availability of raptor prey species; and cause of bird and bat mortalities. • Monitoring will be conducted monthly for 1 year at all turbines in the Solano 4 Wind Project area after the first delivery of power, and will include but not be limited to the following methods unless otherwise determined appropriate by SMUD: ○ The standard search radius will be 100 meters to account for terrain and WTG height. ○ A sufficient number of "road and pad" searches will be conducted to 150 meters to determine the proportion of carcasses falling outside of the standard (100-meter) search radius. ○ Searcher efficiency trials will be conducted for four seasons and will be sufficient to analyze differences in carcass size (small/medium/large) and vegetative cover. ○ Data will be analyzed using procedures described by the California Energy Commission and CDFW (CEC and CDFG 2007), or newer approaches (e.g., General Estimator [Dalthorp et al. 2018], the Evidence of Absence model [Dalthorp et al. 2017]). The data analysis will address adjusted fatality rates annually, seasonally, and by species. An annual report will be prepared each year and a final report will be prepared after the 1-year monitoring period. ○ If a carcass with a band is found in the project area, SMUD will promptly report the banding information to USFWS's Bird Banding Laboratory. SMUD will consult with the laboratory to include any information provided by USFWS that is pertinent to avian mortality at the project site, if any, in the annual monitoring reports. • After postconstruction monitoring data have been obtained, SMUD will review the data. In consultation with USFWS and CDFW, SMUD will determine which specific WTGs, if any, generate disproportionately high levels of avian mortalities (based on evidence of statistically significant higher levels of mortality relative to other WTGs), and whether adaptive management measures are needed to reduce or avoid mortalities at those specific WTGs. • If unauthorized take of a federally listed or state-listed endangered or threatened avian or bat species occurs during project operation, SMUD will notify the appropriate agency (USFWS and/or CDFW) within 48 hours of the discovery, and will submit written documentation of the take to the appropriate agency within 2 calendar days. The documentation will describe the date, time, location, species, and if possible, cause of unauthorized take. Although not expected to occur, SMUD will implement any measures to avoid, minimize, or compensate for possible take in consultation with the USFWS and/or CDFW, including obtaining an Incidental Take Permit, as appropriate. Also, see Mitigation Measure 3.3-9g *Implement Adaptive Management*. SMUD will design and conduct postconstruction mortality monitoring in a way that ensures at least a 50 percent chance of detecting mortality of large raptors (including golden eagle and Swainson's hawk) caused by a collision with a project WTG. Modeling tools such as the Evidence of Absence model (Dalthorp et al. 2017) can be used to design studies with such an objective in mind. This may require adjusting the radius of the search area around the WTGs, the proportion of WTGs searched, or other standard parameters set forth above. After postconstruction monitoring activities, SMUD will conduct an annual "clean sweep" survey around all Solano 4 turbines each subsequent calendar year for the life of the project. In addition, SMUD will continue its current practice of incidental monitoring of the project area through reporting of incidental fatalities or injured birds by on-site staff to the Avian Reporting System (see Mitigation Measure 3.3-9h, "Implement Adaptive Management to Address Disproportionate Mortality of Special-Status Birds or Bats," below). SMUD will also continue to report incidental fatalities or injured birds in compliance with its USFWS Special Purpose Utility Permit (Permit #MB189818-0). As required in Mitigation Measure 3.3-9b SMUD will notify	SMUD to promptly report any banded carcasses to USFWS's lab. After 1 year data collection, SMUD to consult with USFWS and CDFW. Notify USFWS and/or CDFW within 48 hours of discovery of unauthorized take of a listed species. After postconstruction monitoring activities, incidental monitoring of the project area will continue through reporting of incidental fatalities or injured birds				

Table 4-1 Summary of Impacts and Mitigation Measures

CEQA Issue Area	Impacts	Mitigation Measures	Implementation Duration	Monitoring Duration	Responsibility		Applicable Project Component
					Implementation	Monitoring	
		the appropriate agency (USFWS and/or CDFW) within 48 hours of the discovery any unauthorized take of a federally listed or state-listed endangered or threatened species.					
Biological Resources	**Impact 3.3-9: Injury to and mortality of raptors, other birds, and bats from project operation.**	**Mitigation Measure 3.3-9c: Implement a training program for construction and project personnel.** SMUD will implement a training program so that on-site staff will have a thorough understanding of eagle mortality issues and corresponding protocols. The training program focuses on staff members with direct and indirect implementation responsibilities, including managers, supervisors, engineers, and on-site field crews. The training program will include the following elements: • introduction and description of eagle mortality issues; • description of SMUD's environmental stewardship policy (SMUD Board Policy SD-7); • description of avian resources in the project area and the species most susceptible to collision mortality or injury; • discussion of federal and state regulations that protect birds, legal implications, and the need for compliance; • protocols for recording/reporting avian incident data and procedures for carcass collection and injured wildlife; and • responsibilities of staff members to implement the BBCS.	Before and during construction, operation-maintenance, and decommissioning	Before and during construction, operation-maintenance, and decommissioning	Qualified Biologists and SMUD	SMUD	All project components
Biological Resources	**Impact 3.3-9: Injury to and mortality of raptors, other birds, and bats from project operation.**	**Mitigation Measure 3.3-9d: Provide funding for raptor recovery and rehabilitation.** SMUD will contribute $5,000 each year for the duration of project operation to the University of California, Davis, California Raptor Center (UC Davis Raptor Center) or its successors for rehabilitation of injured avian species, including eagles and other raptors. The UC Davis Raptor Center is authorized by USFWS and CDFW to rehabilitate injured and orphaned raptors. The UC Davis Raptor Center successfully returns approximately 60 percent of the sick, injured, and orphaned birds it receives to the wild each year (UC Davis California Raptor Center 2019).	Annually for duration of project operation	N/A	SMUD	SMUD	Project operations
Biological Resources	**Impact 3.3-9: Injury to and mortality of raptors, other birds, and bats from project operation.**	**Mitigation Measure 3.3-9e: Reduce vehicle collision risks to wildlife.** SMUD's operators will enforce a speed limit of 15 miles per hour on all roads on the project site to minimize the risk of collisions with small mammals and other wildlife, thereby reducing the number of roadkills, a potential food source that could attract eagles and increase their risk of vehicle collisions.	During construction and operation-maintenance, and decommissioning	During construction and operation-maintenance, and decommissioning	SMUD and Contractor	SMUD	All project component roads
Biological Resources	**Impact 3.3-9: Injury to and mortality of raptors, other birds, and bats from project operation.**	**Mitigation Measure 3.3-9f: Secure an eagle incidental take permit for Solano 4 Wind from USFWS and implement permit conditions.** SMUD will compensate for the loss of any golden or bald eagles injured or killed as a result of project operation by complying with the conditions described in SMUD's Eagle Take Permit. Compensatory mitigation for eagle fatalities may include paying for the retrofitting of electrical utility poles that present a high risk of electrocution to eagles, as prescribed in the *Eagle Conservation Plan Guidance*, Appendix G (USFWS 2013). The performance standard for this compensatory mitigation would be to implement sufficient measures (e.g., electric utility retrofits) to offset all eagle fatalities directly attributable to project operation and resulting in permanent removal of an eagle from the wild, whether detected during structured postconstruction mortality monitoring surveys or detected incidentally. For each instance of project-related injury or mortality that removes a bird from the population, 32 utility poles shall be retrofitted. This is based on a resource equivalency analysis performed in accordance with USFWS guidelines (USFWS 2013:Appendix G) and assumes that each retrofitted pole would result in 10 years of avoided loss because of electrocution. The resource equivalency analysis also assumes that the take of one eagle and the associated compensatory mitigation will occur during the same year. Certain utility poles may be eligible for "reframing" (as opposed to retrofitting) to avoid electrocution, which USFWS assumes will result in 30 years of avoided loss rather	Before and during construction, operation-maintenance, and decommissioning. Compensatory mitigation for the loss of each eagle shall be completed within 1 year of each instance of documented take. Comply with the federal ITP permit for the life of the project.	During construction, operation-maintenance, and decommissioning.	SMUD and Contractor	SMUD, USFWS	All project components.

Table 4-1 Summary of Impacts and Mitigation Measures

CEQA Issue Area	Impacts	Mitigation Measures	Implementation Duration	Monitoring Duration	Responsibility		Applicable Project Component
					Implementation	Monitoring	
		than 10 years. The reframing of 14 eligible utility poles is sufficient to offset take of a single eagle, according to the resource equivalency analysis. Compensatory mitigation for the loss of each eagle shall be completed within 1 year of each instance of documented take. Retrofitted poles must be considered "high-risk" for electrocution (per USFWS 2013:Appendix G). For instances of bald eagle take, retrofitted poles must be located in areas where both species occur and within the Pacific Flyway north of 40 degrees North latitude. For instances of golden eagle take, retrofitted poles must be located within the Pacific Flyway. These areas represent the USFWS-designated "Eagle Management Units" at the project site for bald eagles and golden eagles, respectively (USFWS 2016). SMUD will comply with the federal eagle incidental take permit that will be secured for the project. Any mitigation completed toward fulfillment of the eagle take permit requirements will be counted toward the mitigation requirements described above. If mitigation requirements specified in the USFWS eagle take permit differ from those described above, the USFWS permit requirements shall prevail.					

Biological Resources	**Impact 3.3-9: Injury to and mortality of raptors, other birds, and bats from project operation.**	**Mitigation Measure 3.3-9g: Implement adaptive management to address disproportionate mortality of special-status birds or bats.**
		SMUD will implement adaptive management strategies if postconstruction mortality monitoring studies determine that project operation is resulting in disproportionate mortality of one or more avian or bat species. The goal of the adaptive management strategies is to avoid a local population of avian or bat species dropping below self-sustaining levels. In accordance with the Solano BBCS (SMUD 2014), a determination to implement adaptive management based on "disproportionate mortality" will consider the factors listed below.
		• Number of annual fatalities per turbine
		• Disproportionate representation of a particular species
		• Comparison to other wind energy facilities
		As part of the annual survey and monitoring program described in Mitigation Measure 3.3-3b above, SMUD will analyze information related to these factors. Through this process of data collection, analysis, and consideration of these factors, disproportionate mortality at individual WTGs will be analyzed.
		A project-related fatality of one or more federal- or California-listed species or one or more California Fully Protected Species would trigger consultation with USFWS and/or CDFW, and implementation of the adaptive management and compensatory mitigation measures described below. If avian or bat mortality resulting from operation of the Solano 4 Wind Project exceeds the maximum estimated fatality rates described in Tables 3.3-11 and 3.3-12 for special-status birds or bats as well as common species, SMUD will develop and implement a comprehensive set of biologically based, reasonable, and feasible management and/or mitigation measures for responding to the fatality threshold exceedance, along with a timeline for implementation. SMUD will consult the USFWS and CDFW in development of the adaptive management and compensatory mitigation strategies for special-status birds and bats. Potential adaptive management actions to be considered include but are not limited to the following:
		• *Implement avian or bat detection/deterrent systems.* This involves testing and implementing systems that detect birds and bats and taking actions designed to reduce the probability of a collision (e.g., informed WTG curtailment, utter deterrents designed to warn or frighten birds and bats from operating WTGs), including:
		  ○ DT Bird/DT Bat Systems
		  ○ IdentiFlight Eagle Detection System
			After postconstruction mortality monitoring studies; during operations of project.
			SMUD will consult the USFWS and CDFW in development of the adaptive management and compensatory mitigation strategies for special-status birds and bats if necessary.
			Implement adaptive management actions if necessary.
				During construction-maintenance.	SMUD	SMUD	All project components

Table 4-1 Summary of Impacts and Mitigation Measures

CEQA Issue Area	Impacts	Mitigation Measures	Implementation Duration	Monitoring Duration	Responsibility		Applicable Project Component
					Implementation	Monitoring	

		• *Implement passive avian or bat deterrents.* This involves testing and implementing deterrents designed to warn or frighten birds and bats from operating WTGs, including:
		  ○ improved blade marking (compatible with Solano County visual guidelines) such as variations in paint color and color patterns;
		  ○ blade designs that produce bird warning "whistles" (without upsetting blade integrity or exceeding ambient noise limits); and
		  ○ ultrasonic devices that infuse the blade-swept area with high-frequency sounds that alert or frighten bats.
		• *Reduce on-site hazards.* Additional techniques for reducing on-site hazards, including possible operational adjustments, should be discussed if mortality rates substantially exceed study estimates. This could include making adjustments to cut-in speed or changes during migratory periods, if such actions are demonstrated to be effective as avoidance and minimization techniques.
		• *Reduce off-site hazards.* This can include installing safety features, such as anti-perching devices on poles or anti-electrocution retrofits and diverters on power lines, outside the project area (with concurrence from landowners and Pacific Gas and Electric Company or their successors) to discourage bird use. This should take advantage of Avian Power Line Interaction Committee guidelines and use hazard reduction techniques identified in SMUD's avian protection plan.
		• *Implement operational minimization protocols (curtailment) during high-risk periods for bats.* High-risk periods include nighttime when wind speeds are low, spring and autumn migration periods, and certain weather conditions such as before and after storms (Arnett et al. 2011), Standard curtailment protocols can reduce bat fatalities by up to 93 percent, and feathering turbine blades can reduce bat fatalities by an average of 35 percent. Refined curtailment approaches such as the predictive algorithm-based curtailment approach developed by Korner-Nievergelt et al. (2013 in Sutter 2018) and Behr et al. (2017 in Sutter 2018), and activity-based curtailment strategies based on bat detection (Sutter 2018) have also been shown to substantially reduce bat mortality.
		• *Contribute to ongoing conservation efforts.* Examples include acquisition of additional conservation property (or easements) that provide habitat for species affected by project operations, and additional direct contributions to habitat restoration organizations or facilities such as the UC Davis Raptor Center					

Biological Resources	**Impact 3.3-12: Indirect impacts on riparian habitat.**	**Mitigation Measure 3.3-12a: Avoid indirect impacts on riparian habitat.** SMUD will avoid and minimize indirect impacts on riparian habitat by implementing the following mitigation measures: • Mitigation Measure 3.5-1, "Prepare and Implement a SWPPP and Associated BMPs," listed in Section 3.5, "Geology, Soils, Paleontological Resources, and Mineral Resources" • Mitigation Measure 3.7-1b, "Establish and Implement an Environmental Training Program," listed in Section 3.7, "Hazards and Hazardous Materials" • Mitigation Measure 3.7-1c, "Prepare and Implement a Hazardous Substance Control and Emergency Response Plan," listed in Section 3.7, "Hazards and Hazardous Materials" • Mitigation Measure 3.7-1d, "Prepare and Implement a Spill Prevention, Control, and Countermeasures Plan," listed in Section 3.7, "Hazards and Hazardous Materials" In addition, SMUD will implement the following measures: • Before any construction activity, SMUD will assign a qualified biologist to identify the locations of riparian habitat and corresponding setbacks required by project permits, for avoidance. Identification of riparian habitat for avoidance will be in addition to and distinguished from any required construction boundary	Before and during construction, operations-maintenance, and decommissioning.	Before and during construction, operations-maintenance, and decommissioning.	SMUD and Contractor	Qualified Biologists and SMUD	All project components with potential to affect riparian habitat

Table 4-1 Summary of Impacts and Mitigation Measures

CEQA Issue Area	Impacts	Mitigation Measures	Implementation Duration	Monitoring Duration	Responsibility		Applicable Project Component
					Implementation	Monitoring	
		fencing or flagging. Setback requirements will be identified as appropriate (e.g., 100-foot setback) on project maps to comply with requirements specified in 404, 401, or 1602 permit conditions.					
Biological Resources	**Impact 3.3-12: Indirect impacts on riparian habitat.**	**Mitigation Measure 3.3-12b: Comply with Section 1600 streambed alteration agreement and CWA Sections 401 and 404 or the state's Porter-Cologne Act.** SMUD will obtain all necessary permits under Section 1602 of the California Fish and Game Code (Lake and Streambed Alteration Agreement) and Sections 401 and 404 of the CWA or the state's Porter-Cologne Act and will implement all conditions and requirements of these state and federal permits obtained for the project. **Mitigation Measure 3.3-12c: Develop a reclamation and revegetation plan.** Before project construction, SMUD will develop and implement a reclamation and revegetation plan to restore sites disturbed by construction, and to reclaim abandoned access roads that will be restored to agricultural uses. The plan will describe reclamation and revegetation efforts to be conducted during project construction, both to stabilize the site and to return temporarily affected areas to pre-project conditions or restore abandoned roads to agricultural uses. The goals of the reclamation and restoration plan will be to: • avoid the introduction and spread of invasive weeds, • develop vegetative cover in disturbed areas to prevent erosion, and • restore abandoned roads to agricultural uses (livestock grazing and dryland farming). The reclamation and restoration plan will be consistent with the goals and objectives described in SMUD's Land Management Plan for the Solano Wind Farm (Althouse and Meade 2018) or subsequent updates to that plan. The targets for percent vegetative cover and percent non-native species composition will be based on pre-project baseline surveys in areas that will be subject to disturbance. Monitoring to assess success (i.e., achieving the target pre-project vegetative cover and species composition) will occur for a period of 2 years. If the success criteria are not met at the end of 2 years, adaptive management measures for weed and erosion control, as described in SMUD's Land Management Plan (Althouse and Meade 2018), will be implemented. The reclamation and revegetation plan will be developed and implemented to reclaim existing vegetation communities and agricultural land uses in the project area to the maximum extent feasible. Reclamation and revegetation of temporarily disturbed sites immediately after the completion of construction activities will help protect against indirect effects on riparian habitat by stabilizing soil and reducing the potential for invasion by nonnative invasive and noxious weeds. The plan will include, at a minimum, the following provisions: • Reclamation of all areas disturbed by project construction, including temporary disturbance areas around construction sites, laydown/staging areas, temporary access roads, and the home run collection lines. Pest species listed by CDFA as List A or B, listed by the California Invasive Plant Council as Moderate or High, and/or targeted by the Solano Weed Management Area for eradication in Solano County shall not be used. A qualified biologist with demonstrated experience with the land cover types to be revegetated will have oversight for the selection of reclamation species. • Revegetation of areas of temporary disturbance as soon as construction is complete to reduce erosion and inhibit the establishment of invasive weeds. • A description of proven available revegetation techniques and procedures (such as hydroseeding, drill seeding, and broadcast seeding, adapted to local conditions) on all disturbed areas. • Salvage of topsoil in all areas subject to grading or excavation. Topsoil will be removed, stockpiled on-site, and returned to the original site (reclaimed) or used in habitat reclamation activities elsewhere on the site.	Before and during construction, and immediately after construction. Obtain necessary permits before construction. Before construction, SMUD will develop and implement a reclamation and revegetation plan. SMUD to implement reclamation and revegetation plan immediately after construction.	Before and during construction, and operation-maintenance.	SMUD and Contractor	SMUD	All project components with potential to affect jurisdictional waters or features

Table 4-1 Summary of Impacts and Mitigation Measures

CEQA Issue Area	Impacts	Mitigation Measures	Implementation Duration	Monitoring Duration	Responsibility		Applicable Project Component
					Implementation	Monitoring	
		• Monitoring of revegetated and reclaimed habitat for a minimum of 2 years or until herbaceous cover meets or exceeds preproject conditions. Success criteria are defined as minimum thresholds for herbaceous vegetative cover, and maximum thresholds for noxious weeds, based on preproject (baseline) conditions for each habitat type to be revegetated (e.g., grazed annual grassland, farmland). • Weed control measures, which may include cultural, mechanical, and/or chemical methods. Any application of herbicides shall be in compliance with all federal and state laws and regulations and implemented by a licensed qualified applicator. Herbicides shall not be applied during or within 72 hours of a scheduled rain event. In riparian areas and near streams and wetlands, only water-safe herbicides shall be used. Herbicides shall not be applied when wind velocities exceed 6 miles per hour. • Adaptive management measures and a remedial planting plan. Remedial measures (e.g., additional planting, weeding, or erosion control) will be taken during the monitoring period if necessary to ensure success of the revegetation or reclamation effort. • Maintenance, monitoring, and reporting procedures. If the revegetation/reclamation fails to meet the established performance criteria for vegetative cover within the maintenance and monitoring period, monitoring of remedial planting shall extend beyond the initial period until the criteria are met, unless otherwise approved by the permitting agencies. If elements of the revegetated/reclaimed area(s) meet their success criteria before the end of 2 years of monitoring, they may be eliminated from future monitoring with approval from the permitting agencies. ***Mitigation Measure 3.3-12d: Conduct worker awareness training.*** SMUD will implement Mitigation Measure 3.3-1b, "Develop and Implement a Worker Environmental Awareness Program," to include specific information regarding riparian habitat that occurs on the project site and that would be identified for avoidance. Training will be conducted before the start of construction. The training will include information about the locations and extent of riparian habitat, methods of resource avoidance, permit conditions, and possible fines for violating permit conditions and federal and/or state environmental laws. The training will also include guidance on methods to avoid the introduction and spread of invasive plant species.					
Biological Resources	**Impact 3.3-13: Loss and degradation of federally protected waters of the United States.**	**Mitigation Measure 3.3-13a: Avoid and minimize impacts on wetlands and other waters of the United States.** SMUD will avoid and minimize impacts on wetlands and other waters of the United States by implementing the following mitigation measures: • Mitigation Measure 3.3-12c, "Develop a Reclamation and Revegetation Plan" • Mitigation Measure 3.5-1a, "Prepare and Implement a SWPPP and Associated BMPs," listed in Section 3.5, " Geology, Soils, Paleontological Resources, and Mineral Resources" • Mitigation Measure 3.7-1b, "Establish and Implement an Environmental Training Program," listed in Section 3.7, "Hazards and Hazardous Materials" • Mitigation Measure 3.7-1c, "Prepare and Implement a Hazardous Substance Control and Emergency Response Plan," listed in Section 3.7, "Hazards and Hazardous Materials" • Mitigation Measure 3.7-1d, "Prepare and Implement a Spill Prevention, Control, and Countermeasures Plan," listed in Section 3.7, "Hazards and Hazardous Materials" SMUD will obtain and implement the terms of all necessary permits under Section 1602 of the California Fish and Game Code (Lake and Streambed Alteration Agreement) and CWA Sections 401 and 404, and will comply with the conditions and requirements of all other federal and state permits obtained for the project. In addition, SMUD will implement the following measures:	Before and during construction, and operations-maintenance, and decommissioning. SMUD will obtain all necessary permits before construction. SMUD will implement all permit conditions during construction and operations-maintenance, and decommissioning. Before the start of any construction activity, SMUD will assign a qualified	Before and during construction, and operations-maintenance, and decommissioning.	SMUD, Qualified Biologists, and Contractor	SMUD	All project components with potential to affect wetlands or other waters of the US

Table 4-1 Summary of Impacts and Mitigation Measures

CEQA Issue Area	Impacts	Mitigation Measures	Implementation Duration	Monitoring Duration	Responsibility		Applicable Project Component
					Implementation	Monitoring	
		• SMUD will identify corresponding setback requirements as appropriate (e.g., 100-foot setback) on project maps to comply with setback requirements described in permit conditions. Any required setback will be shown on project construction drawings and plans (e.g., grading and improvement plans). Construction activities and project components will be located at least 100 feet from aquatic resources wherever feasible. • Before the start of any construction activity, SMUD will assign a qualified biologist to identify the locations of wetlands and other waters and their corresponding setbacks (if applicable) as required by project permits, for avoidance. Identification of wetlands and other waters for avoidance will be in addition to and distinguished from any required construction boundary fencing or flagging.	biologist to identify the locations of wetlands and other waters and their corresponding setbacks.				
Biological Resources	**Impact 3.3-13: Loss and degradation of federally protected waters of the United States.**	**Mitigation Measure 3.3-13b: Avoid and minimize potential effects on waters of the United States from installation of access road culvert crossings.** SMUD will comply with the following mitigation measures to minimize potential effects on waters of the United States caused by installation of culvert crossings to allow vehicular access across waters: • Before project construction, SMUD will design culvert crossings to maintain hydrological connectivity while allowing vehicular access across aquatic features. A hydrology study of the proposed culvert location(s) will be conducted to analyze existing drainage conditions and calculate appropriate culvert size(s). • Before project construction, the contractor will obtain a grading permit from Solano County. During construction, the contractor will comply with all terms and conditions of the permit, including any supplemental conditions if applicable, and with the provisions of Chapter 31 of the Solano County Code, "Grading, Drainage, Land Leveling, and Erosion Control Ordinance." All grading work will be performed in accordance with good design and construction practice. SMUD will supply a bond if requested by Solano County. • The contractor for culvert installation shall adhere to the following general design principles and standards, which shall serve as minimum guidelines for grading and erosion control work performed pursuant to the project's grading permit: ○ All work shall be done in a manner that will minimize soil erosion. ○ Existing natural vegetation shall be retained and preserved wherever possible and practical. ○ Increased potential for erosion by removal of vegetation shall be limited by minimizing the area and time of vegetation removal to the extent practical. Exposure of barren soils shall be limited by completing work before the onset of the rainy season, to ensure that the soil is stabilized and vegetation is established in advance of the rainy season (October 15–April 15). ○ Facilities shall be constructed to retain sediment produced on-site. Sediment basins, sediment traps, and similar required measures shall be installed before any clearing or grading activities, and shall be maintained throughout any such operations until removal is authorized. ○ Seeding, mulching, and other suitable stabilization measures shall be used to protect exposed erodible areas in advance of the rainy season. ○ Provisions shall be made to mitigate any increased runoff caused by altered soil conditions during and after construction. ○ Neither cut nor fill slopes shall be steeper than two parts horizontal to one part vertical (2:1) unless a geological or engineering analysis indicates that steeper slopes are safe and appropriate erosion control measures are specified.	Before and during construction. Before construction, SMUD will design culvert crossings and the contractor will obtain a grading permit from Solano County. Contractor will comply with all terms of conditions of permit and mitigation noted here.	Before and during construction.	SMUD, Qualified Biologist, Contractor	SMUD	All project components with potential to affect waters of the US.

Table 4-1 Summary of Impacts and Mitigation Measures

CEQA Issue Area	Impacts	Mitigation Measures	Implementation Duration	Monitoring Duration	Responsibility		Applicable Project Component
					Implementation	Monitoring	
		○ Cleared vegetation and excavated materials shall be disposed of in a manner that reduces the risk of erosion, and in conformance with the provisions of the approved grading permit. Topsoil shall be conserved for use in revegetation of disturbed areas whenever possible or practical. ○ Every effort shall be made to preserve existing channels and watercourses. No work shall be performed within a channel or watercourse unless no reasonable alternative is available. If such work is performed, it shall be limited to the minimum amount necessary. ○ All fill material shall not include organic, frozen, or other deleterious materials. No rock or similar irreducible material greater than 12 inches in any dimension shall be included in fills. ○ All fill supporting a structure shall be compacted to 90 percent of maximum density as determined by ASTM D 1557, modified proctor, in lifts not exceeding 12 inches in depth.					
Biological Resources	**Impact 3.3-13: Loss and degradation of federally protected waters of the United States.**	**Mitigation Measure 3.3-13c: Comply with Section 1602 streambed alteration agreement for construction activities in jurisdictional areas.** Before construction, SMUD will submit a notification of streambed alteration to CDFW under Section 1602 of the Fish and Game Code. If CDFW concludes that the project will result in adverse impacts to fish and wildlife resources, it will provide a proposed Streambed Alteration Agreement, which must obtain reasonable conditions. SMUD will implement all reasonable permit conditions, including requirements for compensatory mitigation (if any). Where feasible, the compensatory mitigation requirement may be combined with those for other mitigation measures or mitigation required for the CWA Section 404 and 401 permits. These conditions may include the following measures: • Pre-construction Measures: Before any construction activities begin, a qualified wetland biologist will identify and flag the boundaries of all wetlands in the project area. Appropriate barriers (straw bales, silt, fences, etc.) will be installed near sensitive resources to prevent sedimentation outside the work areas. During construction, wetlands will be treated as exclusion areas and activities within them will be strictly limited to those pertaining to this permit application. • SWPPP: The construction contractor shall prepare and implement a SWPPP and associated BMPs. • Hazardous Substance Control Plan. SMUD shall prepare and implement a construction-specific hazardous substance control and emergency response plan for quick, safe cleanup of accidental spills. • Buffer from Drainages. All staging and stockpile areas will be adjacent to the proposed road crossings, but away from sensitive areas. A minimum buffer of 100 feet from drainages would be used for refueling and storage. • Worker Education: Prior to construction, Environmental Awareness Training will be provided to all construction workers. This will consist of tailgate environmental training sessions conducted by a qualified biologist for the purpose of informing all personnel about the wetlands and intermittent streams in the project area and the importance of spill prevention, emergency response measures, and proper implementation of BMPs. Any sensitive species in the project region will also be discussed. Personnel will be trained on the locations of sensitive areas and species as well as rules and methods for avoiding these resources. They will also be briefed on all permit conditions as well as the potential disciplinary actions that could result from violations of state or federal laws. • Construction Monitoring. A qualified biologist will be on site during grading and construction activities to ensure protection of biological and other resources. • Erosion Control: Erosion control and slope stabilization best management practices will be implemented. These practices may include installation of orange construction fencing, silt fencing, hay wattles, hay bales and other protective measures to avoid impacts to unvegetated areas.	Before and during construction. Before construction, SMUD will submit 1602 Permit application to CDFW. If 1602 Permit is issued by CDFW, SMUD will implement conditions.	During construction.	SMUD, Qualified Biologists, Contractor	SMUD, CDFW	Project components with potential to affect jurisdictional areas.

Table 4-1 Summary of Impacts and Mitigation Measures

CEQA Issue Area	Impacts	Mitigation Measures	Implementation Duration	Monitoring Duration	Responsibility		Applicable Project Component
					Implementation	Monitoring	

Biological Resources	**Impact 3.3-13: Loss and degradation of federally protected waters of the United States.**	**Mitigation Measure 3.3-13d: Avoid and minimize potential effects on waters of the United States from horizontal directional drilling.**
		SMUD will implement the following mitigation measures to avoid and minimize potential effects on aquatic resources from horizontal directional drilling underneath drainage and swale features during installation of the underground home run collection lines:
		• SMUD will provide notification regarding the HDD to CDFW as part of the streambed alteration agreement application. SMUD will assign a qualified biological monitor with previous HDD monitoring experience and knowledge of the environmental sensitivities of the project area to monitor all HDD activities. The monitor shall be on-site for the duration of HDD activities and shall provide brief reports of daily activities to CDFW.
		• SMUD's biologist shall conduct on-site briefings for all HDD workers to ensure that all field personnel understand the locations of aquatic resources and their responsibility for timely reporting of frac-outs.
		• Barriers (e.g., straw bales, sedimentation fences) shall be erected between the bore site and all nearby aquatic resources before drilling to prevent any material from reaching aquatic resource areas. The distance between the bore site and aquatic resource areas shall be compliant with requirements for protective setback boundaries as specified the CDFW permit.
		• If the biological monitor suspects a potential frac-out that is not yet visible at the surface (e.g., loss of bentonite slurry in the drill pit but no frac-out at the surface), the HDD contractor shall immediately cease HDD activities and implement measures to reduce the potential for a frac-out (e.g., increase the density of the drilling mud or reduce the pressure of the drill). The contractor shall then be allowed to continue HDD activities.
		• The HDD contractor shall keep necessary response equipment and supplies (e.g., vacuum truck, straw bales, sediment fencing, sand bags) on-site during HDD operations so that they are readily available in the event of a frac-out.
		• SMUD shall prepare a frac-out contingency plan. In the event a frac-out is detected, the HDD contractor shall implement the following measures to reduce or minimize effects on the affected aquatic resource:
		  ○ All work shall stop until the frac-out has been contained and cleaned up.
		  ○ The frac-out area shall be isolated with straw bales, sandbags, or silt fencing to surround and contain the drilling mud; cleanup shall be performed using a vacuum truck supported by construction workers on foot using hand tools, as necessary. (To avoid affecting the stream bed and banks, mechanized equipment shall not be used to scoop or scrape up frac-out materials.)
		  ○ If a frac-out occurs, SMUD shall notify the appropriate jurisdictional agency (USACE, the Central Valley RWQCB, and/or CDFW) by telephone and in writing (email is acceptable) within 24 hours. The required notification shall describe the frac-out and cleanup measures implemented.
		If a frac-out occurs and, based on consultation with appropriate agencies, is considered to have negatively affected waters of the United States, SMUD will implement appropriate measures to restore the area to pre-HDD conditions in consultation with the permitting agencies.
			Before and during construction.
			Before construction, SMUD will provide notification regarding HDD to CDFW as part of streambed alteration agreement application.
			Before construction, SMUD will prepare a frac-out contingency plan.
			Avoidance and minimization measures will be implemented during construction.
			If a frac-out occurs, measures will be taken to stop and contain frac-out and applicable jurisdictional agency/agencies will be contacted.
				During construction.	SMUD, Qualified Biologists, Contractor	SMUD	HDD activities near or under jurisdictional features.

Biological Resources	**Impact 3.3-13: Loss and degradation of federally protected waters of the United States.**	**Mitigation Measure 3.3-13e: Conduct worker awareness training.** SMUD will implement Mitigation Measure 3.3-1b, "Develop and Implement a Worker Environmental Awareness Program," to include specific information regarding wetlands and other waters that occur on the project site and that either will be affected or have been identified for avoidance. Training will be conducted before the start of construction and will include information about the locations and extent of wetlands and other waters, methods of resource avoidance, permit conditions, and possible fines for violating permit conditions and federal and/or state environmental laws.	Before and during construction, operations-maintenance, and decommissioning. Ongoing WEAP training.	During construction, operations-maintenance, and decommissioning.	SMUD, Qualified Biologists, Contractor	SMUD	All project components

Table 4-1 Summary of Impacts and Mitigation Measures

CEQA Issue Area	Impacts	Mitigation Measures	Implementation Duration	Monitoring Duration	Responsibility		Applicable Project Component
					Implementation	Monitoring	
Biological Resources	**Impact 3.3-13: Loss and degradation of federally protected waters of the United States.**	**Mitigation Measure 3.3-13f: Restore temporarily affected waters of the United States.** SMUD will require the construction contractor to restore temporarily disturbed wetlands and other waters of the United States by returning them to preconstruction conditions after construction in accordance with the project's reclamation and restoration plan (Mitigation Measure 3.3-12c). SMUD will comply with all conditions and requirements of federal and state permits obtained for the project.	During construction. See MM 3.3-12c	During construction.	SMUD, Qualified Biologists, Contractor	SMUD	All project components affecting waters of the US.
Biological Resources	**Impact 3.3-13: Loss and degradation of federally protected waters of the United States.**	**Mitigation Measure 3.3-13g: Compensate for loss of waters of the United States.** The acreage and function of all wetlands and other waters lost as a result of project implementation will be replaced and restored on a "no-net-loss" basis. SMUD will compensate for the loss of aquatic resources by purchasing credits from a USACE-approved mitigation bank; purchasing in-lieu fee credits; or restoring, preserving, creating, or enhancing similar habitats at another USACE-approved mitigation area as determined during CWA Section 404 and Section 401 permitting. The minimum wetland compensation ratio to achieve no net loss of the functions and services of wetlands and other waters will be at least 1:1. Final ratios will be determined during the permitting process.	Before construction during permit process.	N/A	SMUD	SMUD	All project components affecting waters of the US.
Archaeo-logical, Historical, and Tribal Cultural Resource	**Impact 3.4-1: Impacts on unique archaeological resources.**	**Mitigation Measure 3.4-1a: Avoid or conduct subsurface testing and/or monitoring during construction in areas with high potential for the presence of buried archaeological sites.** The construction contractor shall avoid conducting ground-disturbing activities in the few locations within the direct APE that have high or the highest potential for buried archaeological sites. If these areas cannot be avoided and project-related ground disturbance in those areas would be sufficiently deep that they could encounter buried archaeological resources, then additional actions may be necessary to mitigate any impacts on as-yet unidentified buried resources. These minimization efforts could include conducting subsurface testing before project construction and/or monitoring during the construction period. In the event that a historic-period archaeological site (such as concentrated deposits of bottles or bricks with makers marks, amethyst glass, or other historic refuse) is uncovered during grading or other construction activities, all ground-disturbing activity within 100 feet of the discovery shall be halted until a qualified archaeologist can assess the significance of the find. SMUD will be notified of the potential find and a qualified archeologist shall be retained to investigate its significance. Any previously undiscovered resources found during construction will be recorded on appropriate California Department of Parks and Recreation 523 forms and evaluated for significance under all applicable regulatory criteria. If the archaeologist determines that the find does not meet the CRHR standards of significance for cultural resources, construction may proceed. If the find is determined to be significant by the qualified archaeologist (i.e., because the find is determined to constitute either a historical resource or a unique archaeological resource), the archaeologist shall work with SMUD to follow accepted professional standards such as further testing for evaluation or data recovery, as necessary. If artifacts are recovered from significant historic-period archaeological resources, they shall be housed at a qualified curation facility. The results of the identification, evaluation, and/or data recovery program for any unanticipated discoveries shall be presented in a professional-quality report that details all methods and findings, evaluates the nature and significance of the resources, analyzes and interprets the results.	Before and during construction. Before construction, SMUD's Archaeologist shall conduct subsurface testing and/or mark locations within the direct APE as environmentally sensitive areas (ESAs) to be avoided by construction. During construction, monitoring will be conducted in locations within the direct APE that cannot be avoided.	Before and during construction.	SMUD, Qualified Archaeologists, Contractor	SMUD	All project components in APEs
Archaeo-logical, Historical, and Tribal Cultural Resource	**Impact 3.4-1: Impacts on unique archaeological resources.**	**Mitigation Measure 3.4-1b:** Prior to the start of construction, SMUD shall provide worker awareness training to the construction contractor and SMUD's project superintendent regarding the potential for cultural and tribal cultural resources that could be encountered during ground disturbance, the regulatory protections afforded to such finds, and the procedures to follow in the event of discovery of a previously unknown resource,	Before and during construction. Before construction, SMUD to provide	Before and during construction.	SMUD, Qualified Archaeologists, Contractor	SMUD and UAIC	All project components

Table 4-1 Summary of Impacts and Mitigation Measures

CEQA Issue Area	Impacts	Mitigation Measures	Implementation Duration	Monitoring Duration	Responsibility		Applicable Project Component
					Implementation	Monitoring	
		including notifying SMUD representatives. SMUD shall invite representatives of UAIC to periodically inspect the active areas of the project, including any soil piles, trenches, or other disturbed areas. UAIC shall be notified at least 48 hours prior to start of construction. In the event that tribal representatives or construction workers find evidence of potential tribal cultural resources, the procedures identified in Mitigation Measure 3.4-1c and 3.4-2 shall be implemented.	WEAP training to workers. UAIC to be notified at least 48 hours prior to start of construction. Ongoing WEAP training for new workers.				
Archaeo-logical, Historical, and Tribal Cultural Resource	**Impact 3.4-1: Impacts on unique archaeological resources.**	**Mitigation Measure 3.4-1c: Halt ground-disturbing activity upon discovery of subsurface archaeological features.** If any prehistoric or historic-era subsurface archaeological features or deposits, including locally darkened soil ("midden"), that could conceal cultural deposits are discovered during construction, all ground-disturbing activity shall cease within 100 feet of the resource(s) discovered. A qualified cultural resources specialist and Native American representatives and monitors from culturally affiliated Native American Tribes shall assess the significance of the find and make recommendations for further evaluation and treatment as necessary. These recommendations shall be documented in the project record. For any recommendations made by interested Native American Tribes that are not implemented, the project record shall provide a justification explaining why the recommendation was not followed. If the qualified archaeologist determines the find to be significant (because the find constitutes either a historical resource, a unique archaeological resource, or a tribal cultural resource), and if an adverse impact on a TCR, unique archaeology, or other cultural resource occurs, then SMUD shall consult with interested Native American groups and individuals regarding mitigation contained in PRC Sections 21084.3(a) and 21084.3(b) and State CEQA Guidelines Section 15370. Potential mitigation measures developed in coordination with interested Native American groups may include: • preservation in place (the preferred manner of mitigating impacts on archaeological sites), • archival research, • replacement of cultural items for educational or cultural purposes, • preservation of substitute TCRs or environments and/or subsurface testing, or contiguous block unit excavation and data recovery (when it is the only feasible mitigation, and pursuant to a data recovery plan).	During construction. If any prehistoric or historic-era subsurface archaeological features or deposits are discovered during construction, all ground-disturbing activity shall cease within 100 feet of the resource(s) discovered. Involve qualified cultural resource specialist and Native American representatives as applicable.	During construction.	SMUD, Qualified Archaeologist, Contractor	SMUD, Native American representative(s)	All project components
Archaeo-logical, Historical, and Tribal Cultural Resource	**Impact 3.4-2: Impacts on tribal cultural resources.**	**Mitigation Measure 3.4-2: Complete AB 52 consultation.** SMUD concluded consultation with the UAIC and Wilton Rancheria under AB 52. If TCRs are identified that have the potential to be adversely affected by the project, SMUD shall notify Tribal Historic Preservation Officer Matthew Moore (THPO@auburnrancheria.com) and Lou Griffin (hgriffin@wiltonrancheria-nsn.gov) should an inadvertent discovery of TCRs occur, and will develop mitigation measures in consultation with interested Native American groups and individuals to minimize those impacts. These mitigation measures could include the following or equally effective mitigation measures (as identified in PRC Section 21084.3): (1) Avoidance and preservation of the resources in place, including but not limited to planning and construction to avoid the resources and protect the cultural and natural context, or planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria. (2) Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including but not limited to the following:	During construction. If inadvertent discovery during construction, SMUD will notify Tribal Historic Preservation Officers and develop mitigation measures in consultation with interested Native American groups and individuals to minimize impacts.	During construction.	SMUD and Qualified Archaeologist	SMUD	All project components

Table 4-1 Summary of Impacts and Mitigation Measures

CEQA Issue Area	Impacts	Mitigation Measures	Implementation Duration	Monitoring Duration	Responsibility		Applicable Project Component
					Implementation	Monitoring	
		(A) protecting the cultural character and integrity of the resource; (B) protecting the traditional use of the resource; or (C) protecting the confidentiality of the resource. (3) Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places. (4) Protecting the resource. (5) Preserving substitute TCRs, resources, or environments.					
Archaeo-logical, Historical, and Tribal Cultural Resource	**Impact 3.4-3: Impacts on previously unidentified human remains.**	**Mitigation Measure 3.4-3: Halt ground-disturbing activity upon discovery of human remains.** If human remains are discovered during any demolition/construction activities, potentially damaging ground-disturbing activities within 100 feet of the remains shall be halted immediately, and SMUD will notify the Solano County coroner and the NAHC immediately, according to PRC Section 5097.98 and Section 7050.5 of the California Health and Safety Code. If the remains are determined by the NAHC to be Native American, the guidelines of the NAHC shall be followed during the treatment and disposition of the remains. SMUD will also retain a professional archaeologist with Native American burial experience to conduct a field investigation of the specific site and consult with the Most Likely Descendant, if any, identified by the NAHC. Following the coroner's and NAHC's findings, the archaeologist and the NAHC-designated Most Likely Descendant shall determine the ultimate treatment and disposition of the remains and take appropriate steps to ensure that additional human interments are not disturbed. PRC Section 5097.94 identifies the responsibilities for acting upon notification of a discovery of Native American human remains.	During construction. If human remains are discovered, potentially damaging ground-disturbing activities within 100 feet of the remains will be halted immediately. SMUD will notify Solano County coroner and the NAHC immediately.	During construction.	SMUD, Qualified Archaeologists, Contractor	SMUD, Solano County, NAHC	All project components
Geology and Soils	**Impact 3.5-1: Substantial soil erosion or loss of topsoil.**	**Mitigation Measure 3.5-1: Prepare and implement a SWPPP and associated BMPs.** Before any ground-disturbing activities begin, the construction contractor shall apply for and maintain coverage under the Construction General Permit. The contractor shall prepare and implement a SWPPP, including an erosion control plan, that includes erosion control measures and construction waste containment measures to ensure that waters of the United States and the state are protected during and after project construction. The SWPPP shall include site design measures to minimize off-site stormwater runoff that might otherwise affect surrounding habitats. The SWPPP shall be provided to SMUD for review and approval before it is provided to the SWRCB. The Central Valley Regional Water Quality Control Board and/or San Francisco Bay Regional Water Quality Control Board will review and monitor the effectiveness of the SWPPP through mandatory reporting by SMUD and the construction contractor as required. The SWPPP shall be prepared with the following objectives: • Identify all pollutant sources, including sources of sediment, that may affect the quality of stormwater discharges from construction of the project. • Identify BMPs that effectively reduce or eliminate pollutants in stormwater discharges and authorized nonstormwater discharges from the site during construction to the Best Available Technology/Best Control Technology standard. • Provide calculations and design details as well as BMP controls for site run-on that are complete and correct. • Identify project discharge points and receiving waters. • Provide stabilization BMPs to reduce or eliminate pollutants following construction. The construction contractor shall implement the SWPPP, including all BMPs, and shall inspect all BMPs during construction. Potential SWPPP BMPs could include but would not be limited to the following: • Preserve existing vegetation where possible.	Before and during construction. Before construction, contractor shall apply for and maintain coverage under the Construction General Permit. Before construction, the contractor shall prepare and implement a SWPPP, including erosion control plan. Contractor shall provide SWPPP to SMUD for review and approval before submitting to SWRCB.	During construction.	SMUD and Contractor	SMUD, CV-RWQCB, SFB-RWQCB	All project components

Table 4-1 Summary of Impacts and Mitigation Measures

CEQA Issue Area	Impacts	Mitigation Measures	Implementation Duration	Monitoring Duration	Responsibility		Applicable Project Component
					Implementation	Monitoring	
		• Roughen the surfaces of final grades to prevent erosion, decrease runoff, increase infiltration, and aid in vegetation establishment. • Place riparian buffers or filter strips along the perimeter of the disturbed area to intercept pollutants before off-site discharge. • Place fiber rolls around on-site drain inlets to prevent sediment and construction-related debris from entering inlets. • Place fiber rolls along down-gradient disturbed areas of the site to reduce runoff flow velocities and prevent sediment from leaving the site. • Place silt fences down-gradient of disturbed areas to slow down runoff and retain sediment. • Stabilize the construction entrance to reduce the tracking of mud and dirt onto public roads by construction vehicles. • Stage excavated and stored construction materials and soil stockpiles in stable areas and cover or stabilize materials to prevent erosion. • Stabilize temporary construction entrances to limit transport/introduction of invasive species and control fugitive dust emissions.					
Geology and Soils	**Impact 3.5-2: Location of the project on a geologic unit or soil that is unstable, or that would become unstable as a result of the project.**	**Mitigation Measure 3.5-2: Conduct a site-specific geotechnical investigation.** Before final design of the project, the construction contractor shall complete a design level geotechnical investigation and report for the project, to be prepared by a California Registered Civil Engineer or Geotechnical Engineer. The report will set forth design and construction measures intended to ensure site stability in compliance with applicable seismic and building codes. The report shall address and make recommendations on the following: • road, pavement, and parking area design; • structural foundations; • grading practices; • erosion/winterization; • special problems discovered on-site (e.g., groundwater, expansive/unstable soils); and • slope stability. All recommendations of the geotechnical report shall be incorporated into the construction plans and specifications that are reviewed and stamped by a licensed engineer of the appropriate discipline. SMUD must include the measures in the contract for implementation by the construction contractor for the duration of construction related activities.	Before final design of project, contractor to complete a design level geotechnical investigation and report for project. During construction, implement design and construction measures to ensure site stability. Include all recommendations of geotechnical report into construction plans and specifications.	Before and during construction.	SMUD and Contractor	SMUD	All project components
Geology and Soils	**Impact 3.5-3: Creation of a substantial risk as a result of expansive soils.**	**Mitigation Measure 3.5-3: Implement Mitigation Measure 3.5-2, "Implement all recommendations from the geotechnical investigation."** The construction contractor shall implement Mitigation Measure 3.5-2, above, which requires the completion of a design level geotechnical investigation and report for the project and the implementation of all design and construction measures contained therein.	See MM 3.5-2	See MM 3.5-2	See MM 3.5-2	See MM 3.5-2	See MM 3.5-2
Geology and Soils	**Impact 3.5-4: Degradation or destruction of a unique paleontological resource.**	**Mitigation Measure 3.5-4: Conduct a site-specific paleontological resource investigation and implement identified protective measures.** Before the start of any ground-disturbing activities, SMUD shall have prepared a site-specific analysis of paleontological resources. At a minimum, the site-specific analysis shall include a review of the types of the geologic formation(s) present at the project site and a determination of the likelihood that those formation(s) would contain a "unique paleontological resource" as stated in Title 14, California Code of Regulations, Appendix G (the CEQA checklist). If a site-specific analysis determines that a	Before and during construction. Before construction, a site-specific analysis of paleontological	Before and during construction.	SMUD, Qualified paleontologist, Contractor	SMUD	All project components

Table 4-1 Summary of Impacts and Mitigation Measures

CEQA Issue Area	Impacts	Mitigation Measures	Implementation Duration	Monitoring Duration	Responsibility		Applicable Project Component
					Implementation	Monitoring	
		project may have an adverse effect on a "unique paleontological resource," project-specific mitigation measures shall be identified and implemented to address the following requirements: • Cessation of work in the vicinity of the find and notification to SMUD. • Retention of a qualified paleontologist to evaluate the resource and prepare a proposed mitigation plan, which may include some or all of the following elements: a field survey, construction monitoring, sampling and data recovery procedures, museum storage coordination for any specimen recovered, and a report of findings. • Implementation of recommendations made by the paleontologist, where SMUD determines that such recommendations are necessary and feasible. All recommendations of the report shall be incorporated into the construction plans and specifications that are reviewed and stamped by a licensed engineer of the appropriate discipline. SMUD must include the measures in the contract for implementation by the construction contractor for the duration of construction related activities.	resources will be prepared. All recommendations of the report shall be incorporated into the construction plans and specifications. Retention of qualified paleontologist if necessary.				
Hazards and Hazardous Materials	**Impact 3.7-1: Exposure of people and the environment to hazardous materials.**	**Mitigation Measure 3.7-1a: Implement Mitigation Measure 3.5-1, "Prepare and implement a SWPPP and associated BMPs."** The contractor shall implement Mitigation Measure 3.5-1 listed in Section 3.5, "Geology, Soils, and Mineral Resources." This measure requires the preparation of a project-specific SWPPP and implementation of the SWPPP by the construction contractors, including all necessary BMPs.	See MM 3.5-1	See MM 3.5-1	See MM 3.5-1	See MM 3.5-1	See MM 3.5-1
Hazards and Hazardous Materials	**Impact 3.7-1: Exposure of people and the environment to hazardous materials.**	**Mitigation Measure 3.7-1b: Establish and implement an environmental training program.** Before the start of construction, SMUD or its contractor shall establish an environmental training program to communicate environmental concerns and appropriate work practices to all field personnel. The training program shall cover the use of hazardous materials, waste management, spill prevention, emergency response measures, and proper implementation of BMPs. The program shall emphasize site-specific physical conditions to improve hazard prevention (e.g., identification of potentially hazardous substances) and shall include a review of all site-specific plans, including but not limited to the project's SWPPP, health and safety plan (as required by OSHA), fugitive dust control plan, and hazardous substances control and emergency response plan.	Before and during construction. Before construction, give WEAP training. Ongoing WEAP training to new employees during construction.	Before and during construction.	SMUD and/or Contractor	SMUD	All project components
Hazards and Hazardous Materials	**Impact 3.7-1: Exposure of people and the environment to hazardous materials.**	**Mitigation Measure 3.7-1c: Prepare and implement a hazardous substance control and emergency response plan.** Before the start of construction, SMUD or its contractor shall prepare a construction-specific hazardous substance control and emergency response plan. The plan shall include preparations for quick and safe cleanup of accidental spills; prescribe procedures for handling hazardous materials to reduce the potential for a spill during construction; and include an emergency response program to ensure quick and safe cleanup of accidental spills. The hazardous substance control and emergency response plan shall also identify BMPs in the event a spill occurs. BMPs may include but are not limited to the following: use of oil-absorbent materials, tarps, and storage drums to contain and control any minor releases; and storage and use of emergency-spill supplies and equipment in locations adjacent to work and staging areas. The hazardous substance control and emergency response plan shall identify areas where refueling and vehicle maintenance activities and storage of hazardous materials, if any, will be permitted.	Before and during construction. Before the start of construction, SMUD or its contractor shall prepare a construction-specific hazardous substance control and emergency response plan. Implement plans during construction.	During construction.	SMUD or Contractor	SMUD	All project components
Hazards and Hazardous Materials	**Impact 3.7-1: Exposure of people and the environment to hazardous materials.**	**Mitigation Measure 3.7-1d: Prepare and implement a spill prevention, control, and countermeasures (SPCC) plan.** If more than 1,320 gallons of petroleum products will be stored on-site (excluding vehicles), SMUD's construction contractor shall prepare and implement a SPCC plan in accordance with state and federal requirements, including 40 CFR 112. The SPCC plan shall identify engineering and	Before and during construction. If more than 1,320 gallons of petroleum products will be stored on-site	During construction.	Contractor	SMUD	All project components

Table 4-1 Summary of Impacts and Mitigation Measures

CEQA Issue Area	Impacts	Mitigation Measures	Implementation Duration	Monitoring Duration	Responsibility		Applicable Project Component
					Implementation	Monitoring	
		containment measures for preventing releases of oil into waterways. The SPCC plan shall be submitted to SMUD for review and approval before the start of operations, or during construction. If less than 1,320 gallons of petroleum products will be stored on-site (excluding vehicles), this mitigation measure is not required.	(excluding vehicles), SMUD's construction contractor shall prepare and implement a SPCC plan in accordance with state and federal requirements.				
Hazards and Hazardous Materials	**Impact 3.7-1: Exposure of people and the environment to hazardous materials.**	**Mitigation Measure 3.7-1e: Prepare and implement a hazardous materials business plan.** If the project will use or store hazardous materials equal to or greater than 55 gallons of liquids, 500 pounds of solids, and/or 200 cubic feet (at standard temperature and pressure) of compressed gases, SMUD's construction contractor shall prepare a hazardous materials business plan that will conform with Solano County Environmental Health requirements. The contractor shall file the plan with SMUD annually. The hazardous materials business plan shall identify site activities; list the contact information for the business owner/operator; provide an inventory of hazardous materials used on-site; provide a facilities map; and identify an emergency response plan/contingency plan. During the construction phase, if threshold quantities of any hazardous materials are stored on-site for more than 90 consecutive days, then the hazardous materials business plan shall be filed and maintained for as long as any of those thresholds are met or exceeded. During the operations phase, if the threshold for any hazardous materials is met or exceeded for more than 30 consecutive days, then the hazardous materials business plan shall be to SMUD and shall be maintained as long as the thresholds are met or exceeded. The regulations require annual submittal of the hazardous materials business plan as long as the project meets the conditions for the continued applicability of the regulations. If less than 55 gallons of liquids, 500 pounds of solids, and/or 200 cubic feet (at standard temperature and pressure) of compressed gases will be used or stored on-site, this mitigation measure is not required.	Before and during construction. Contractor shall prepare a hazardous materials business plan that will conform with Solano County Environmental Health requirements. During construction, the hazardous materials business plan shall be filed and maintained. During the operations, the hazardous materials business plan shall be maintained.	Before and during construction.	SMUD and Contractor	SMUD	All project components
Hazards and Hazardous Materials	**Impact 3.7-2: Exposure of people and the environment to subsurface hazardous materials disturbed during construction.**	**Mitigation Measure 3.7-2a: Implement Mitigation Measures 3.7-1a through 3.7-1e.** SMUD or its construction contractor shall implement Mitigation Measures 3.7-1a through 3.7-1e, listed above. These measures establish and require implementation of various plans to minimize the risk of accidental release of hazardous materials.	See MM 3.7-1a through 3.7-1e	See MM 3.7-1a through 3.7-1e	See MM 3.7-1a through 3.7-1e	See MM 3.7-1a through 3.7-1e	See MM 3.7-1a through 3.7-1e
Hazards and Hazardous Materials	**Impact 3.7-2: Exposure of people and the environment to subsurface hazardous materials disturbed during construction.**	**Mitigation Measure 3.7-2b: Delineate any construction areas where the presence of hazardous materials is known or suspected.** Before the start of construction, SMUD or its contractor shall delineate construction areas where the presence of hazardous materials is known or suspected. Such areas shall be avoided during construction to the extent feasible. These areas include but are not limited to abandoned gas wells and underground gas pipelines. Underground utilities, such as gas pipelines and high-voltage lines, shall be identified and marked clearly. If necessary, appropriate encroachment permits shall be obtained before work begins. A Spill Discovery Response Plan shall be developed before construction begins. The plan shall be implemented in the event that hazardous materials are unexpectedly encountered during construction. The plan shall include instructions for work crews to stop work immediately, notify the appropriate emergency response agency, and in the case of natural gas pipelines, notify the pipeline operator.	Before and during construction. Before construction, delineate construction areas where there are known or suspected hazardous materials. Avoid such areas during construction. Before construction, develop a Spill	Before and during construction.	SMUD and/or Contractor	SMUD	All project components

Table 4-1 Summary of Impacts and Mitigation Measures

CEQA Issue Area	Impacts	Mitigation Measures	Implementation Duration	Monitoring Duration	Responsibility		Applicable Project Component
					Implementation	Monitoring	
			Discovery Response Plan and implement during construction in the event that hazardous materials are encountered.				
Hazards and Hazardous Materials	**Impact 3.7-2: Exposure of people and the environment to subsurface hazardous materials disturbed during construction.**	**Mitigation Measure 3.7-2c: Maintain access to gas wells.** Should a gas well location be verified, SMUD and its construction contractor shall implement the following measures: • Maintain physical access to any gas well encountered. • Ensure that the abandonment of gas wells is to current standards. • If one or more unknown wells is discovered during project development, immediately notify the California Department of Conservation, Division of Oil, Gas, and Geothermal Resources so that the newly discovered well(s) can be incorporated into the records and investigated. Any wells found during implementation of the project, and any pertinent information obtained, shall be communicated to the Solano County Recorder for inclusion in the title information of the subject real property. This is to ensure that present and future property owners are aware of (1) the wells located on the property, and (2) potentially significant issues associated with any improvements near oil or gas wells. • Avoid performing work on any oil or gas well without written approval from the California Department of Conservation, Division of Oil, Gas, and Geothermal Resources in the form of an appropriate permit. This includes but is not limited to mitigating leaking fluids or gas from abandoned wells, modifications to well casings, and/or any other re-abandonment work.	Before and during construction. Before and during construction, if a gas well is located: maintain access, ensure abandonment of well(s) is to current standards, immediately notify DOGGR, avoid working on any oil or gas well without written approval from DOGGR.	Before and during construction.	SMUD and Contractor	SMUD	All project components
Hazards and Hazardous Materials	**Impact 3.7-3: Safety hazard to air traffic.**	**Mitigation Measure 3.7-3: Mark and light wind turbine generators during construction.** SMUD will e-file FAA Form 7460-2, Part 1, Notice of Actual Construction or Alteration, at least 60 days before the start of construction, so that appropriate action can be taken to amend the affected procedure(s) and/or altitude(s), if necessary. To ensure proper conspicuity of turbines at night during construction, all WTGs shall be lit with temporary lighting once they reach a height of 200 feet or greater until the permanent lighting configuration is turned on. As the height of the structure continues to increase, the temporary lighting shall be relocated to the uppermost part of the structure. The temporary lighting may be turned off for periods when they would interfere with construction personnel. If practical, permanent obstruction lights shall be installed and operated at each level as construction progresses. An FAA Type L-810 steady red light fixture shall be used to light the structure during the construction phase. If power is not available, WTGs shall be lit with self-contained, solar-powered light-emitting diode (LED) steady red light fixtures that meet the photometric requirements of an FAA Type L-810 lighting system. The lights shall be positioned to ensure that a pilot has an unobstructed view of at least one light at each level. The use of a Notice to Airmen (NOTAM) (D) to avoid lighting WTGs within the project site until completion of the entire project is prohibited. This measure includes temporary construction equipment such as cranes and derricks, which may be used during actual construction of the structures. However, this equipment shall not exceed a height of 200 feet. Separate notice shall be provided to the FAA for any equipment taller than 200 feet.	Before and during construction. At least 60 days before start of construction, SMUD to file Form 7460-2, Part 1 with FAA. Light all WTGs with temporary lighting once they reach a height of 200 ft or greater until permanent lighting is turned on. Light temporary construction equipment (i.e. cranes and derricks), which shall not exceed height of 200 ft.	Before and during construction.	SMUD and Contractor	SMUD	WTGs and associated facilities (i.e. meteorological towers) and temporary construction equipment.

Table 4-1 Summary of Impacts and Mitigation Measures

CEQA Issue Area	Impacts	Mitigation Measures	Implementation Duration	Monitoring Duration	Responsibility		Applicable Project Component
					Implementation	Monitoring	
Hazards and Hazardous Materials	**Impact 3.7-4: Exposure of employees and the public to hazards from accidental rotor failure.**	**Mitigation Measure 3.7-4: Conduct Safety Evaluation of WTGs.** The Contractor shall provide a safety evaluation of the proposed siting plan, and ensure that the design and layout of the Project considers the safety evaluation. The Contractor's safety evaluation shall include an analysis of the following types of failure that could occur: a. Blade Throw Risk Analysis: Probability of Loss of an entire blade by failure at the hub attachment. b. Tower Failure. Complete failure of the tower, particularly at the base. c. Rotor Delamination. Failure of the fiberglass rotor skin, resulting in flying fragments. d. Blade-Throw Strike. Impact of a failed rotor blade on the tubular tower	Before construction. Contractor to provide safety evaluation of proposed siting plan before construction.	Before construction.	Contractor	SMUD	All project components involving WTGs.
Hazards and Hazardous Materials	**Impact 3.7-5: Exposure of people or structures to a significant risk of loss, injury, or death involving wildfires.**	**Mitigation Measure 3.7-5a: Prepare and implement a grass fire control plan.** SMUD or its construction contractor will develop a grass fire control plan. The plan shall be implemented for use during construction and operation of the project to reduce potential impacts on public services relative to fire protection services in the project area. The plan shall include notification procedures and emergency fire precautions, as discussed in Section 4.8, "Hazards and Hazardous Materials." This shall include the training of construction workers in the use of firefighting equipment available on-site (e.g., fire extinguishers) and communicating with the Montezuma Fire Protection District. Additionally, the nearby Montezuma Fire Protection District stations are equipped for grass fires, and the proposed access roads for WTG maintenance shall be used to improve access by fire trucks during emergency situations and serve as a fire break. The operations and maintenance building shall be designed to SMUD's safety standards and shall include a fire alarm. In addition, construction and maintenance crews shall be trained in fire prevention, carry fire extinguishers in all vehicles, and have access to one or more water trucks.	Before and during construction, and operation-maintenance. Before construction, develop a Grass Fire Control Plan. Implement Plan during construction and operation. Training for construction and maintenance crews.	Before and during construction.	SMUD and Contractor	SMUD	All project components
Hazards and Hazardous Materials	**Impact 3.7-5: Exposure of people or structures to a significant risk of loss, injury, or death involving wildfires.**	**Mitigation Measure 3.7-5b: Implement Mitigation Measure 3.11-1b, "Create and implement an emergency access plan and notify emergency services providers of anticipated roadway obstructions."** SMUD will implement Mitigation Measure 3.11-2 listed in Section 3.11, "Transportation and Traffic." This measure requires the development and implementation of a plan to maintain emergency access during WTG transport and throughout the construction period.	See MM 3.11-1b	See MM 3.11-1b	See MM 3.11-1b	See MM 3.11-1b	See MM 3.11-1b
Hydrology and Water Quality	**Impact 3.8-1: Short-term degradation of water quality.**	**Mitigation Measure 3.8-1a: Implement Mitigation Measure 3.5-1, "Prepare and implement a SWPPP and associated BMPs."** SMUD shall prepare and the construction contractor to implement Mitigation Measure 3.5-1 listed in Section 3.5, "Geology, Soils, and Mineral Resources." This measure requires the construction contractor to implement a SWPPP, including all necessary BMPs.	See MM 3.5-1	See MM 3.5-1	See MM 3.5-1	See MM 3.5-1	See MM 3.5-1
Hydrology and Water Quality	**Impact 3.8-1: Short-term degradation of water quality.**	**Mitigation Measure 3.8-1b: Implement Mitigation Measure 3.7-1b, "Establish and implement an environmental training program."** The construction contractor shall implement Mitigation Measure 3.7-1b listed in Section 3.7, "Hazards and Hazardous Materials." This measure requires SMUD to establish and require implementation of an environmental training program for all field personnel that communicates spill prevention, emergency response measures, and proper implementation of BMPs.	See MM 3.7-1b	See MM 3.7-1b	See MM 3.7-1b	See MM 3.7-1b	See MM 3.7-1b
Hydrology and Water Quality	**Impact 3.8-1: Short-term degradation of water quality.**	**Mitigation Measure 3.8-1c: Implement Mitigation Measure 3.7-1c, "Prepare and implement a hazardous substance control and emergency response plan."** The construction contractor shall implement Mitigation Measure 3.7-1c listed in Section 3.7, "Hazards and Hazardous Materials." This measure requires SMUD to prepare and implement a construction-specific hazardous substance control and emergency response plan for quick, safe cleanup of accidental spills.	See MM 3.7-1c	See MM 3.7-1c	See MM 3.7-1c	See MM 3.7-1c	See MM 3.7-1c

Table 4-1 Summary of Impacts and Mitigation Measures

CEQA Issue Area	Impacts	Mitigation Measures	Implementation Duration	Monitoring Duration	Responsibility		Applicable Project Component
					Implementation	Monitoring	
Hydrology and Water Quality	**Impact 3.8-1: Short-term degradation of water quality.**	**Mitigation Measure 3.8-1d: Implement Mitigation Measure 3.7-1d, "Prepare and implement a spill prevention, control, and countermeasures plan."** The construction contractor shall implement Mitigation Measure 3.7-1d listed in Section 3.7, "Hazards and Hazardous Materials." This measure requires SMUD to prepare and the construction contractor to implement a spill prevention control and closures plan to prevent the discharge of petroleum products into waterways.	See MM 3.7-1d	See MM 3.7-1d	See MM 3.7-1d	See MM 3.7-1d	See MM 3.7-1d
Transportation	**Impact 3.11-1: Short-term construction transport-related traffic hazards and incompatible uses.**	**Mitigation Measure 3.11-1a: Create and implement a traffic control plan and notify the public of anticipated roadway obstructions.** SMUD or its construction contractor will work with Caltrans, Solano County, and the City of Napa to determine the lowest hourly traffic flows on affected facilities and develop a traffic control plan. The traffic control plan shall specify travel times and days and provide for public notification of anticipated roadway obstructions before transporter travel days. Traffic control plan measures shall include the use of pilot cars for oversize loads; traffic safety measures, such as warning signs; coordination with local jurisdictions; and safety personnel to direct traffic as needed. To minimize impacts on roadway traffic flows, transporters shall travel under loaded conditions during off-peak hours and possibly during evenings or at night. The final plan shall be submitted to all affected agencies for review and approval. After agency approvals have been received, the traffic control plan shall be implemented during transport of the WTG components.	Before and during construction. Before construction, develop a Traffic Control Plan and implement during construction. Consult with other agencies.	Before and during construction.	SMUD and Contractor	SMUD, Caltrans, Solano County, City of Napa	All project components.
Transportation	**Impact 3.11-1: Short-term construction transport-related traffic hazards and incompatible uses.**	**Mitigation Measure 3.11-1b: Create and implement an emergency access plan and notify emergency services providers of anticipated roadway obstructions.** SMUD or its construction contractor will work with affected emergency services providers to develop and implement a plan to maintain emergency access during transport of WTG components and throughout the construction period. The plan shall identify alternative emergency access routes; the need to station emergency equipment in areas where access will be reduced; and notification protocols between SMUD, its contractors, and affected providers. The final plan shall be submitted to all affected agencies for review and approval. After agency approvals have been received, the emergency access plan shall be implemented during transport of WTG components and throughout the construction period as necessary.	Before and during construction. Consult with emergency services to develop and implement an Emergency Access Plan during transport of WTG components.	Before and during construction.	SMUD and Contractor	SMUD and affected agencies (Caltrans, Solano County, City of Napa)	During transport of WTG components.
Transportation	**Impact 3.11-1: Short-term construction transport-related traffic hazards and incompatible uses.**	**Mitigation Measure 3.11-1c: Obtain an agency transportation permit for each load exceeding weight, length, width, and height standards.** SMUD or its construction contractor will submit an application to Caltrans, Solano County, and the City of Napa for a transportation permit for each load that exceeds weight, length, width, or height standards. The applications shall identify the specific transporter to be used and provide details about the turbine components' load specifications, the requested route, and the time and date of transport. All permit conditions shall be implemented during transport of WTG components.	Before and during construction. Submit transportation permit applications to affected agencies. Implement all permit conditions during transport of WTG components.	Before and during construction.	SMUD and Contractor	SMUD and affected agencies (Caltrans, Solano County, City of Napa)	During transport of WTG components.
Transportation	**Impact 3.11-1: Short-term construction transport-related traffic hazards and incompatible uses.**	**Mitigation Measure 3.11-1d: Improve roadways to enable safe use or use shorter transporters, and obtain agency transportation permits for transport of extra-legal length vehicles.** SMUD or its construction contractor will make improvements to public roads to enable delivery of WTG components and provide access for construction equipment. These improvements shall accommodate all turning movements of the maximum-size transporter. A detailed topographic survey shall be conducted to determine the exact limits, and to identify additional areas that may be affected. All roadway improvements shall be designed and implemented in close cooperation with Solano County (and other jurisdictions, if applicable).	During construction. Make improvements to public roads, as necessary, in cooperation with Solano County (and other jurisdictions, if applicable).	During construction.	SMUD and Contractor	SMUD and affected agencies (Solano County, etc.)	Roads used to transport WTG components.

Table 4-1 Summary of Impacts and Mitigation Measures

CEQA Issue Area	Impacts	Mitigation Measures	Implementation Duration	Monitoring Duration	Responsibility		Applicable Project Component
					Implementation	Monitoring	
		An alternative mitigation measure is to use shorter transporters to reduce the impact, although this measure is also expected to require a reduction in the size of the WTG components, which likely will increase the number of trips if the overall turbine dimensions remain the same.	Conduct topographic survey.				
Transportation	**Impact 3.11-2: Short-term increase in construction traffic on physically deficient roadway segments.**	**Mitigation Measure 3.11-2: Monitor the physical condition of roadway segments along primary access routes to the project site and restore the physical condition of affected roadways to the extent damaged by the project.** SMUD or its construction contractor will conduct a preconstruction survey and assessment of existing pavement conditions along SR 12 east, Shiloh Road, Collinsville Road, Talbert Lane, Stratton Road, Birds Landing Road, and Montezuma Hills Road. If the preconstruction pavement conditions are deficient, the preconstruction pavement analysis shall establish the baseline for required improvements. If the preconstruction pavement conditions are acceptable, improvements shall be required only if the postconstruction pavement condition is deficient, and only to the extent that the project demonstrably contributed to such deficiencies. If deficient following construction, any segments of SR 12 east and Shiloh Road, Collinsville Road, Talbert Lane, Stratton Road, Birds Landing Road, and Montezuma Hills Road that are affected by the project shall be returned to preconstruction conditions after construction. Implementing this measure will ensure that construction activities will not worsen pavement conditions, relative to existing conditions. Before construction, SMUD will enter into mitigation agreements with Caltrans (for SR 12 east) and Solano County (for Shiloh Road, Collinsville Road, Talbert Lane, Stratton Road, Birds Landing Road, and Montezuma Hills Road) to verify the location, extent, timing, and fair-share cost to be paid by SMUD for any necessary pre- and postconstruction physical improvements. The fair-share amount will be either the cost to return the affected roadway segment to its preconstruction condition or a contribution to programmed planned improvements. Repairs may include overlays or other surface treatments.	Before and post-construction. Preconstruction survey and assessment of existing pavement conditions. Before construction, SMUD will make a good-faith effort to enter into mitigation agreements with Caltrans and Solano County. Repair of damaged roads post-construction as necessary.	Before, during, and post-construction.	SMUD and Contractor	SMUD, Caltrans, Solano County	Roads used to transport WTG components.

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5 References

Appendix A. Technical Study Reports and Presentations

Black & Veatch. 2018. *Solano Wind Energy Project Wind Project Expansion Assessment*. Prepared for SMUD by Black & Veatch, Rancho Cordova, CA. 4 January 2018.

Downey Brand. *April 26, 2019 Letter to Shute Mihaly & Weinberger LLP re: Solano County ALUC Comments on SMUD Notice of Preparation for Solano 4 Wind Project*. Prepared for SMUD by Downy Brand.

Capitol Airspace Group. 2018a. *SMUD Solano Phase 1 & Phase 4 Obstruction Evaluation & Airspace Analysis*. Prepared for SMUD by Capitol Airspace Group, Alexandria, VA. 25 July 2018.

_____. 2018b. *Capitol Airspace Aeronautical Study Process*. Prepared for SMUD by Capitol Airspace Group, Alexandria, VA. 31 July 2018.

Federal Aviation Administration (FAA). *Determination of No Hazard to Air Navigation, Aeronautical Study No. 2018-WTW-13388-OE to 2018-WTW-13406-OE*. 1 February 2019.

_____. *Extension of Determination of No Hazard to Air Navigation, Aeronautical Study No. 2018-WTW-13388-OE to 2018-WTW-13406-OE*. 28 January 2021.

Sacramento Municipal Utilities District (SMUD). 2019. *Resource Planning Report: IRP filing report for submission to the California Energy Commission*. SMUD, Sacramento, CA. April 2019.

_____. 2021. *2030 ZERO Carbon Plan*. SMUD, Sacramento, CA. April 2021.

Sample, Steven, Executive Director Military Aviation and Installation Assurance Siting Clearinghouse, Department of Defense. *February 9, 2021 letter re: FAA Study Number 2018-WTW-13388-OE and 18 associated structures*. Washington, DC.

Simmons, Colonel Cory A., USAF Commander. *January 11, 2021 Letter re: 60 AMW Solano 4 Wind Project Operational Risk Assessment*. Travis Air Force Base, CA.

Solano County. 2021. *Solano County ALUC Hearing Transcript, May 20, 2021*. Solano County, 675 Texas Street, Fairfield, California. 20 May 2021.

Westslope Consulting, LLC. 2018a. *SMUD Solano 4 Cumulative Impact Study and Mitigation Solution Results for 2018 Vestas V136 and V150 Wind Turbine Layouts*. Prepared for SMUD by Westslope Consulting, LLC, Norman, OK. 6 September 2018.

_____. *Solano Phase I Repower Wind Project Basic Radar Line-of-Sight Study*. Prepared for SMUD by Westslope Consulting, LLC, Norman, OK. 16 April 2018.

Westslope Consulting, LLC and Capitol Airspace Group. 2021. *March 30, 2021 Letter of Response to Dr. Jerry Johnson, Director of Engineering Regulus Group, LLC*. Westslope Consulting, LLC, Norman, OK. Capitol Airspace Group, Alexandria, VA.

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