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COMMENTS

of the

CALIFORNIA UNIONS FOR RELIABLE ENERGY

on

Preliminary Staff Assessment

Carrizo Energy Solar Farm

Application for Certification (07-AFC-8)

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On behalf of California Unions for Reliable Energy (“CURE”), this letter provides comments on the preliminary Staff assessment (“PSA”) for the Carrizo Energy Solar Farm (“Project”). Staff has identified several key issues and has provided preliminary analyses of these issues. However, as explained more fully below, the PSA does not satisfy the requirements of the California Environmental Quality Act (“CEQA”)¹ or the Warren-Alquist Act.² Accordingly, an adequate, revised PSA must be prepared and circulated for public review and comment.

I. THE PSA SHOULD BE REVISED AND RECIRCULATED FOR PUBLIC COMMENT

In the approval process for an application for certification of a power plant project, the Energy Commission acts as lead agency under CEQA.³ In all essential respects, its process is functionally equivalent to that of all other CEQA proceedings.⁴ Specifically, a PSA is the functional equivalent to a draft environmental impact report (“EIR”),⁵ the draft environmental document prepared by Staff to inform decision-makers and the public of a project’s environmental impacts.

CEQA has two basic purposes. Unfortunately, the PSA falls short of satisfying either of them. First, CEQA is designed to inform decision makers and the public about the potential, significant environmental effects of a project.⁶ The PSA, like an EIR, is the “heart” of this requirement.⁷ The EIR has been described as “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.”⁸ CEQA mandates that an EIR, or EIR equivalent, be prepared “with a sufficient degree of analysis to provide decision-makers with information which enables them to make a decision which intelligently takes account of environmental consequences.”⁹ Further, in preparing an environmental document, “an agency must use its best efforts to find out and disclose all that it reasonably

¹ Pub. Resources Code, § 21000 et seq.

² *Pub. Resources Code*, § 25500 et seq.

³ Pub. Resources Code, § 25519(c).

⁴ Pub. Resources Code, § 21080.5.

⁵ See Memorandum of Understanding Between the U.S. Department of the Interior, Bureau of Land Management California Desert District and the California Energy Commission Staff, Concerning Joint Environmental Review For Solar Thermal Power Plant Projects, p. 4, available at http://www.energy.ca.gov/siting/solar/BLM_CEC_MOU.PDF (“[t]he assessments provided by the Parties must be sufficient to meet all federal and state requirements for NEPA and CEQA and shall be included as part of the joint Preliminary Staff Assessment/Draft Environmental Impact Statement and the joint Final Staff Assessment/Final Environmental Impact Statement.”)

⁶ 14 Cal. Code Regs. (“CEQA Guidelines”), § 15002(a)(1).)

⁷ *No Oil, Inc. v. City of Los Angeles* (1974) 13 Cal.3d 68, 84.

⁸ *County of Inyo v. Yorty* (1973) 32 Cal.App.3d 795.

⁹ CEQA Guidelines, § 15151.

can.”¹⁰ Second, CEQA directs public agencies to avoid or reduce environmental damage when possible by requiring alternatives or mitigation measures.¹¹

The PSA could not have satisfied these purposes because the Applicant failed to provide Staff with the information necessary to draft a CEQA-compliant document. Although Staff asserts that the analyses in the PSA are “similar to those contained in an EIR,”¹² the PSA simply does not contain the information required by CEQA and its implementing guidelines.¹³ Because the Applicant neglected to provide Staff with sufficient information, Staff issued a PSA that is incomplete with respect to potentially significant impacts and mitigation measures for several resource areas.¹⁴

It appears that Staff’s goal is to include additional analyses and mitigation measures in the Final Staff Assessment (“FSA”). However, CEQA requires recirculation of an EIR, or EIR equivalent, when significant new information is added to the EIR following public review but before certification.¹⁵ The CEQA Guidelines clarify that new information is significant if “the EIR is changed in a way that deprives the public of a meaningful opportunity to comment upon a substantial adverse environmental effect of the project or a feasible way to mitigate or avoid such an effect.”¹⁶ The purpose of recirculation is to give the public and other agencies an opportunity to evaluate the new data and the validity of conclusions drawn from it.¹⁷ Consequently, Staff’s objective to include numerous additional analyses and mitigation measures in the FSA violates CEQA. Rather, Staff must recirculate a revised PSA that includes the outstanding analyses and currently unidentified mitigation measures.

As shown below, the PSA must be revised to inform the public and decision makers of the Project’s significant impacts, and to avoid or reduce environmental damage when possible by requiring alternatives or mitigation measures. Thus, Staff, after receiving the necessary information from the Applicant to draft a complete PSA, must correct the shortcomings outlined below, and circulate a revised PSA for public review and comment.

¹⁰ CEQA Guidelines, § 15144.

¹¹ CEQA Guidelines, § 15002(a)(2) and (3). *See also Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 Cal.3d 553, 564; *Laurel Heights Improvement Ass’n v. Regents of the University of California* (1988) 47 Cal.3d 376, 400.

¹² PSA, p. 1-1.

¹³ Pub. Resources Code, § 21100; CEQA Guidelines, §§ 15120(c), 15122-15131.

¹⁴ PSA, p. 1-7.

¹⁵ Pub. Resources Code, § 21092.1.

¹⁶ CEQA Guidelines § 15088.5.

¹⁷ *Save Our Peninsula Comm. v. Monterey County Bd. of Supervisors* (1981) 122 CalApp3d 813, 822.

II. THE PSA MUST ACCURATELY DESCRIBE THE PROJECT

An accurate, stable and finite project description is the sine qua non of an informative and legally adequate environmental review document.¹⁸ Without it, CEQA's objective of fostering public disclosure and informed decision making is stymied. "Only through an accurate view of the Project may affected outsiders and public decision-makers balance the proposal's benefit against its environmental cost, consider mitigation measures, assess the advantage of terminating the proposal (i.e., the 'no Project' alternative) and weigh other alternatives in the balance."¹⁹ A project description is legally inadequate if it is factually flawed or if it lacks sufficient information to enable the decision-makers and the public to evaluate the impacts of the project.²⁰

As discussed below, the PSA must be revised to accurately, completely, and consistently describe the Project footprint, the Project's water consumption, and the Project layout. Currently, the PSA mischaracterizes key project features that have the potential to result in significant impacts. As a result, potentially significant environmental impacts were not adequately analyzed or addressed in the PSA.

A. The PSA Must Accurately and Completely Describe the Project Footprint

The PSA incorrectly states that impacts to the 380-acre construction laydown area will be temporary because the Applicant claims that the laydown area will be returned to its pre-construction condition.²¹ The Applicant has misled the Staff here. In reality, the Project includes two *permanent* crossings for Carrisa Creek in the construction laydown area to facilitate a *permanent* access road on and around the 380-acre construction laydown area.²²

As proposed, the construction laydown area will be fully enclosed by Route 58 and the access road.²³ The PSA contains no discussion of this aspect of the Project and no analysis of any impacts associated with permanent and direct loss of land due to road building or impacts associated with enclosing what will remain of the property with roads. Certainly, a 380-acre area that is completely surrounded by roads poses numerous potentially significant impacts, particularly to wildlife movement. Because the PSA mischaracterizes the project footprint, impacts from the development of the 380-acre construction laydown area are not adequately analyzed or addressed in the PSA. 1,020 acres will be *permanently* impacted by the

¹⁸ *County of Inyo v. City of Los Angeles* (1977) 71 Cal.App.3d 185, 192.

¹⁹ *Id.* at 192-193.

²⁰ *Id.* at 193.

²¹ See e.g., PSA, pp. 4.2-10 and 4.5-7.

²² PSA, p. 4.9-11.

²³ Supplement to AFC, Fig. 1.4-1.

Project. As a result, analyses and mitigation measures should reflect impacts from disturbance of 1,020 acres, not 640 acres.²⁴ Accordingly, the PSA must be revised and recirculated for public review and comment.

B. The PSA Must Accurately, Completely, and Consistently Describe the Project's Water Consumption

The PSA's project description states that the Project is expected to consume approximately 21.8 acre-feet of water per year.²⁵ However, the PSA also states that the Project is estimated to require approximately 20.8 acre-feet of water per year.²⁶ Further, the PSA states that the "water supply for construction appears to be significantly under-estimated" and the Applicant has not demonstrated that all construction requirements can be successfully accomplished with the proposed water supply.²⁷ During the PSA workshop, Staff commented that the Applicant's water use estimate did not take into account the water necessary to maintain a soil moisture content of 15% during grading of 1.2 million cubic yards of soil. Thus, it appears that neither the 20.8 nor 21.8 acre-feet of water per year estimates are accurate. As a result, the PSA fails to properly describe the Project's water consumption. Without knowledge of the Project's water consumption, it is impossible to determine the Project's impacts on the water supply. As a result, a revised PSA must be circulated after the Applicant provides Staff with necessary information regarding water consumption.

C. The PSA Must Accurately Describe the Project Layout

The PSA incorrectly describes the layout of the construction laydown area. For example, the PSA states that the fueling station will be located in the southwest corner of the laydown area.²⁸ The layout described in the PSA reflects the layout outlined in the AFC.²⁹ However, the Applicant filed a supplement to the AFC in July 2008 with a modified layout for the construction laydown area.³⁰

We understand that Staff has had to bear the brunt of keeping up with the numerous and varying filings by the Applicant. In fact, as recently as October 15, 2008, the Applicant wrote a letter to John Kessler transmitting its updated biological assessment that continues to describe the layout with a fueling station located in the southwest corner of the laydown area, as originally proposed in the AFC. Unfortunately, as a result, the PSA does not accurately describe the Project

²⁴ PSA, p. 4.2-15 ("the conservation of an adjacent area does not offset the 640-acre net loss of kit fox habitat").

²⁵ *Id.* at p. 3-3.

²⁶ *Id.* at p. 4.9-8.

²⁷ *Id.* at p. 4.9-1.

²⁸ *Id.* at p. 4.9-11.

²⁹ AFC, Fig. 1.1-4.

³⁰ Supplement to AFC, Fig. 1.4-1.

layout, and it is therefore factually flawed. Without precise information regarding the Project layout, decision-makers and the public cannot evaluate the Project's impacts. The PSA must therefore be corrected and recirculated for public review and comment.

III. THE PSA MUST PROVIDE SUFFICIENT DETAIL TO ANALYZE THE PROJECT'S IMPACTS

The PSA, like an EIR, must provide sufficient information to allow decision-makers and the public to understand the environmental consequences of the Project.³¹ Because the Applicant failed to provide Staff with necessary information, the PSA falls short of CEQA's requirements. Instead, Staff was compelled to release an incomplete PSA, with the intention of providing additional information and analyses in the FSA. In turn, the public was denied an adequate opportunity to evaluate the environmental impacts of the Project.

Preparation of an EIR, or EIR equivalent, and consideration of comments on it from the public enables the agencies that will consider the project to have the information necessary to weigh competing policies and interests.³² Further, if significant new information is added to the EIR, the lead agency must recirculate the document for further review and comment.³³

The following statements contained in the PSA demonstrate that, due to insufficient information, the PSA is deficient under CEQA:

- “Four technical areas...are currently undetermined with respect to mitigation of potential impacts and/or conformance with applicable LORS.”³⁴
- “Habitat compensation for permanent and temporary impacts remains an unresolved issue...”³⁵
- “Mitigation for habitat loss remains an unresolved issue, and the Applicant will need to work with Staff, CDFG, and USFWS to identify the appropriate suite of mitigation measures...”³⁶
- “Due to insufficient information and unresolved issues ...Staff is unable to conclude whether impacts to biological resources ...would be

³¹ *Napa Citizens for Honest Gov't v. Napa County Board of Supervisors* (2001) 91 Cal.App.4th 342, 356.

³² *Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 Cal.3d 553, 576.

³³ Pub Resources Code, § 21092.1; Cal. Code Regs., § 15088.5.

³⁴ PSA, p. 1-7.

³⁵ *Id.*

³⁶ *Id.* at p. 1-8.

mitigated to less than significant levels. Similarly, Staff cannot determine at this time whether the project would conform with all applicable LORS.”³⁷

- “Staff will continue to work with San Luis Obispo County to determine the project’s compliance with ...the Land Use Ordinance.”³⁸
- “Staff needs the Applicant to prepare a draft Noise Mitigation Plan....Staff will need to evaluate this plan before drawing further conclusions in the FSA.”³⁹
- “In order to complete its analysis for the Final Staff Assessment, the Applicant needs to prepare and provide Staff with a comprehensive draft Traffic Mitigation Plan...”⁴⁰
- “At this time Staff is unable to form final conclusions whether the ...Project...would create an aesthetic impact...or whether the project would be consistent with LORS...”⁴¹
- “To ensure that an appropriate analysis is conducted for this project, Staff is taking time between the Preliminary and Final Staff Assessments to incorporate additional information and consider its impact upon the visual integrity of the area. Yet to be considered is additional information related to the construction laydown area, landscaping, a review of the glint and glare study and cumulative impacts. Conclusions on the project’s...impact significance and LORS compliance will be provided in the Final Staff Assessment.”⁴²
- “Staff cannot conclude whether significant impacts to wildlife...would be reduced to less than significant...until Staff...complete[s] their analysis/modeling...”⁴³
- “Staff...is unable to conclude at this time whether an alternative site would meet project objectives and mitigate significant impacts...”⁴⁴
- “Staff has listed the outstanding issues...To resolve these issues, Staff requires either additional data, further discussion and analysis, or is

³⁷ *Id.* at p. 1-9.

³⁸ *Id.* at p. 1-9.

³⁹ *Id.*

⁴⁰ *Id.* at p. 1-11.

⁴¹ *Id.* at p. 1-12.

⁴² *Id.*

⁴³ *Id.* at p. 1-13.

⁴⁴ *Id.* at p. 1-14.

awaiting conditions from a permitting agency prescribing mitigation.”⁴⁵

- “Based on the information available at this time, Staff will work to resolve the outstanding issues and to update our preliminary conclusions for the FSA.”⁴⁶
- “Staff is continuing to coordinate with USFWS and CDFG to determine the potential for the CESF to impact condors.”⁴⁷
- “In order to develop a consistent analysis and mitigation approach to address the potential impacts from direct habitat loss and reduced habitat connectivity,...Staff [is] developing a multi-agency collaborative analysis process.”⁴⁸
- “Potential compensation lands for mitigation...have yet to be identified.”⁴⁹
- “Analysis of this increase in traffic will be modeled by Staff and incorporated in the wildlife corridor impact and mitigation analysis. The traffic impacts to biological resources...and the appropriate mitigation will be discussed in the Final Staff Assessment.”⁵⁰
- “Staff will continue working...to assess the potential for impacts to sensitive birds, including California condor, and will discuss the potential impacts and recommended mitigation measures in the Final Staff Assessment.”⁵¹
- “The wildlife modeling process will occur soon...”⁵²
- The Final Staff Assessment will include appropriate mitigation measures to ensure that all impacts to biological resources ...are fully mitigated.”⁵³
- “Staff is unable to conclude whether impacts to biological resources...would be mitigated to less than significant levels since

⁴⁵ *Id.* at p. 1-15.

⁴⁶ *Id.*

⁴⁷ *Id.* at p. 4.2-11.

⁴⁸ *Id.* at p. 4.2-13.

⁴⁹ *Id.* at p. 4.2-16.

⁵⁰ *Id.* at p. 4.2-19.

⁵¹ *Id.* at p. 4.2-20.

⁵² *Id.* at p. 4.2-21.

⁵³ *Id.*

Staff lacks sufficient information to complete its analysis. Staff is also unable to determine whether the project would conform to all applicable LORS.”⁵⁴

- “Land use Staff cannot analyze the impacts of such land conversion...in this Preliminary Staff Assessment...Land use Staff anticipates incorporating this analysis into the Final Staff Assessment.”⁵⁵
- “Reflected light...could present a potential glare hazard to drivers...Staff continues to investigate this issue and will provide a complete analysis in the Final Staff Assessment.”⁵⁶
- “Staff has contacted a consultant...to review the...glint and glare study. The consultant review is expected to be included in the Final Staff Assessment. At this time, Staff has not made any recommendations regarding the submitted lighting plan and glint and glare study.”⁵⁷
- “Staff is evaluating the impact...on a unique resource such as the northern Carrizo Plain. The conclusion will be provided in the Final Staff Assessment.”⁵⁸
- “At this time, Staff cannot make a conclusion regarding the project’s potential introduction of glint or glare to the northern Carrizo Plain...”⁵⁹
- “At this time, Staff does not have information about lighting, glint and glare, surface treatments, landscaping or screening for the proposed Topaz Solar Farm project, and the foreseeable California Solar Ranch project to evaluate the potential visual cumulative impact.”⁶⁰
- “At this time, Staff cannot conclude that the project would comply with all applicable [LORS] pertaining to aesthetics, or preservation and protection of sensitive visual resources.”⁶¹

⁵⁴ *Id.* at p. 4.2-23.

⁵⁵ *Id.* at p. 4.5-10.

⁵⁶ *Id.* at p. 4.10-13.

⁵⁷ *Id.* at p. 4.12-16.

⁵⁸ *Id.* at p. 4.12-25.

⁵⁹ *Id.* at p. 4.12-26.

⁶⁰ *Id.*

⁶¹ *Id.*

- “Staff cannot conclude whether significant impacts to wildlife...would be reduced...by considering an alternate site until Staff...complete[s] their analysis/modeling of wildlife movement and corridor needs.”⁶²

Clearly, the PSA lacks a tremendous amount of information which is necessary to analyze the Project’s potentially significant impacts. Thus, the PSA does not satisfy CEQA. Once the Applicant provides Staff with the pertinent information, a revised PSA containing additional analyses and mitigation measures must be drafted and circulated for public review and comment.

IV. THE PSA MUST ESTABLISH AN ACCURATE BASELINE

A correct baseline is necessary for an accurate evaluation of environmental impacts. The baseline refers to the existing environmental setting used as a starting point to measure whether a proposed project may cause a significant environmental impact.⁶³ CEQA defines “baseline” as the physical environment as it actually exists at the time CEQA review commenced, not as it theoretically could have existed.⁶⁴ “[T]he impacts of the project must be measured against the ‘real conditions on the ground’.”⁶⁵

The PSA’s baseline method is inconsistent, unclear, and in some instances, blatantly violates the plain language of CEQA. The air quality section states that “the project site was previously zoned and operated as agricultural operation, thus Staff believes that the emissions emitted at the site before and after construction of the facility may not be that much different.”⁶⁶ It appears that the PSA is attempting to establish a baseline from conditions that existed in the past, not from conditions that exist on the ground now. This theoretical baseline creates the illusion that impacts from the Project are not significant. Courts have rejected theoretical baselines.⁶⁷ For example, in *Save Our Peninsula*, the court stated that, “[a]n EIR must focus on impacts to the existing environment, not hypothetical situations.”⁶⁸ Further, in *Riverwatch*, the court noted “the generally accepted principle that environmental impacts should be examined in light of the

⁶² *Id.* at p. 6-1.

⁶³ *Fat v. County of Sacramento* (2002) 97 Cal.App.4th 1270, 1278 (“*Fat*”), citing Remy, et al., Guide to the Calif. Environmental Quality Act (1999) p. 165.

⁶⁴ CEQA Guidelines, §15125(a) (emphasis added); *Riverwatch v. County of San Diego* (1999) 76 Cal.App.4th 1428, 1453 (“*Riverwatch*”).

⁶⁵ *Save Our Peninsula Com. v. Monterey County Board of Supervisors* (2001) 87 Cal.App.4th 99, 121-123 (“*Save Our Peninsula*”); *Environmental Planning and Information Council v. County of El Dorado* (“*EPIC*”) (1982) 131 Cal.App.3d 350, 358; *City of Carmel-by-the-Sea v. Board of Supervisors* (“*City of Carmel*”) (1986) 183 Cal.App.3d 229.

⁶⁶ PSA, p. 4.1-14.

⁶⁷ *Save Our Peninsula*, 87 Cal.App.4th at 121-123; *EPIC*, 131 Cal.App.3d at 358; *City of Carmel*, 183 Cal.App.3d 229.

⁶⁸ *Save Our Peninsula*, 87 Cal.App.4th at 121-122.

environment as it exists when a project is approved.”⁶⁹ Thus, the PSA must be revised to measure impacts to air quality based on actual conditions that exist on the Project site, not hypothetical conditions that may have existed in the past.

Establishment of an appropriate baseline is particularly important to resolving the dispute between the Applicant and the agencies regarding the quality of habitat found on the Project site. The Applicant claims that the Project site does not provide suitable habitat to numerous special status species because it is agricultural land. However, when the application was filed, Sections 28 and 33 were annual grasslands, not in cultivation.⁷⁰ In fact, these sections have only been cultivated intermittently over the past several decades.⁷¹ Thus, the Applicant is incorrect, and, in fact, it is this intermittent pattern that allowed numerous special status species to exist on the Project site. Therefore, the appropriate baseline is intermittently cultivated land that hosts a number of special status species. The PSA must be revised to include the correct baseline.

V. THE PSA MUST DISCLOSE AND ANALYZE ALL POTENTIALLY SIGNIFICANT IMPACTS

CEQA requires the PSA to disclose and analyze all of a project’s potentially significant adverse environmental impacts.⁷² Identification of a project’s significant environmental effects is one of the primary purposes of an EIR and is necessary to implement the stated public policy that agencies should not approve projects if there are feasible mitigation measures or project alternatives available to reduce or avoid significant environmental impacts.⁷³ Because the Applicant failed to provide necessary information, however, Staff could not effectively evaluate the Project’s impacts in the PSA. Thus, the PSA does not satisfy CEQA’s requirements.

Specifically, due to insufficient information from the Applicant, the PSA contains cursory or flawed analyses of impacts associated with air quality, biological resources, land use and planning, socioeconomics, visual resources, and water resources. The PSA should be revised to address the impacts outlined below, and recirculated for public review and comment.

⁶⁹ *Riverwatch*, 76 Cal.App.4th at 1453

⁷⁰ Letter from California Department of Fish and Game to California Energy Commission, December 31, 2008, p. 3.

⁷¹ Letter from California Department of Fish and Game to California Energy Commission, December 31, 2008, p. 3.

⁷² Pub. Resources Code, § 21100(b)(1).

⁷³ Pub. Resources Code, §§ 21002, 21002.1(a).

A. The PSA Must Disclose and Analyze All Potentially Significant Impacts on Air Quality

1. Significant Air Quality and Public Health Impacts From Deterioration of the Level of Service On Roadways Must Be Adequately Analyzed

The three-year construction of the Project will have impacts on local traffic and circulation,⁷⁴ which, in turn, carries a negative impact on air quality. These indirect impacts are not discussed in the PSA. While traffic impacts are discussed, the air quality implications are not discussed, evaluated, or mitigated. For example, the PSA states that vehicles traveling on State Route 58 could be delayed 31 minutes due to Project construction.⁷⁵ However, the PSA does not analyze the increased emissions from the number of vehicles idling, times the frequency of delays. In addition, the PSA concludes that the Project would contribute to significant cumulative impacts to traffic.⁷⁶ When traffic circulation deteriorates, vehicle idle times, and therefore vehicle emissions, increase. In turn, the health risks to residents increase, as well as the overall levels of PM2.5 and PM10. These impacts are not analyzed or mitigated in the PSA.

To understand the Project's potential individual and cumulative impacts on public health and welfare, it is important to understand the severity of health impacts caused by elevated concentrations of PM2.5 in the ambient air. Since 1996, more than 2,000 peer-reviewed studies have been published validating earlier epidemiologic studies that link both acute and chronic fine particle pollution with serious morbidity and mortality. This research has also expanded the list of health effects associated with fine particle pollution and has identified health effects at considerably lower exposure levels than previously reported. Overwhelming scientific evidence shows that long-term exposure to fine particulate pollution contributes to pulmonary and systemic oxidative stress, inflammation, progression of atherosclerosis, and risk of ischemic heart disease and death. A 2002 study found that each ten micrograms per cubic meter increase in PM2.5 air pollution was associated with approximately a six percent increase in cardiopulmonary mortality and an eight percent increase in lung cancer mortality.⁷⁷

Short-term exposure is equally damaging and contributes to complications of atherosclerosis, such as plaque vulnerability, thrombosis, and acute ischemic events. A study published in 2007, of 12,865 patients, evaluated the role of fine particulate matter exposure in triggering acute ischemic heart disease events. The

⁷⁴ PSA, p. 4.10-1.

⁷⁵ PSA, p. 4.10-9.

⁷⁶ *Id.* at p. 4.10-21.

⁷⁷ A.A. Pope III, R.T. Burnett, M.J. Thun, E.E. Calle, D. Krewski, K. Ito, G.D. Thurston, Lung Cancer, Cardiopulmonary Mortality, and Long-term Exposure to Fine Particulate Air Pollution, *Journal of the American Medical Association*, v. 287, no. 9, pp. 1132-1141, 2002.

study found a sharply elevated risk of heart attacks for people with clogged arteries after just a day or two of short-term exposure to fine particulate matter.⁷⁸ The U.S. EPA concluded with respect to short-term exposure studies that “epidemiological evidence was found to support likely causal associations between PM_{2.5} and both mortality and morbidity from cardiovascular and respiratory diseases.”⁷⁹ In response to this new information, the U.S. EPA tightened the national 24-hour PM_{2.5} ambient air quality standard from 65 micrograms per cubic meter to 35 micrograms per cubic meter.⁸⁰

A large portion of PM_{2.5} emissions arises from diesel exhaust. Diesel exhaust contains nearly 40 toxic substances, and diesel soot particles are particularly damaging to human health. Diesel exhaust has been linked to a range of serious health problems including an increase in respiratory diseases, lung damage, cancer, and premature death. Exposure to diesel exhaust increases the risk of lung cancer. It also causes non-cancer effects including chronic bronchitis, inflammation of lung tissue, thickening of the alveolar walls, immunological allergic reactions, and airway constriction.^{81 82} Diesel exhaust is estimated to contribute to more than 75% of the added cancer risk from air toxics in the United States.⁸³

As early as 1998, the National Institute for Occupational Safety and Health identified diesel exhaust as a potential occupational carcinogen. On August 27, 1998, after extensive scientific review and public hearing, CARB formally identified particulate emissions from diesel-fueled engines as a toxic air contaminant, regulated pursuant to Health and Safety Code section 39650 *et seq.*⁸⁴ In May 2002, the U.S. EPA, after another exhaustive review, concluded that

long-term (i.e. chronic) inhalation exposure is likely to pose lung cancer hazard to humans, as well as damage the lung in other ways

⁷⁸ Pope, C.A. III, Muhlestein J.B., May H.T., Renlund D.G., Anderson J.L., Horne B.D., Ischemic Heart Disease Events Triggered by Short-Term Exposure to Fine Particulate Air Pollution, *Circulation*, No. 114, pp. 2443-2448; abstract available at <http://circ.abajournals.org/cgi/content/abstract/114/23/2443>.

⁷⁹ U.S. EPA, National Center for Environmental Assessment, Office of Research and Development, Provisional Assessment of Recent Studies on Health Effects of Particulate Matter Exposure, EPA/600/R-06/063, July 2006.

⁸⁰ U.S. EPA, Office of Air Quality Standards and Planning, September 2006 Revisions to the National Ambient Air Quality Standards for Particle Pollution; U.S. EPA, National Ambient Air Quality Standards for Particulate Matter, Final Rule, Federal Register, 40 CFR Part 50, Vol. 71, No. 200, pp. 61144-61233, October 17, 2006.

⁸¹ Letter from John R. Froines, Scientific Review Panel, to John D. Dunlap, III, Chairman, California Air Resources Board, May 27, 1998.

⁸² Findings of the Scientific Review Panel on The Report on Diesel Exhaust as adopted at the Panel's April 22, 1998 Meeting.

⁸³ Environmental Defense Fund, *Cleaner Diesel Handbook, Bring Cleaner Fuel and Diesel Retrofits into Your Neighborhood*, April 2005, p. iv.

⁸⁴ California Air Resources Board, Resolution 98-35, August 27, 1998.

depending on exposure. Short term (i.e. acute) exposures can cause irritation and inflammatory symptoms of a transient nature...The assessment also indicates that evidence for exacerbation of existing allergies and asthma symptoms is emerging.⁸⁵

There is no question that the increased idling on roadways could result in potentially significant impacts to air quality and public health that the public is entitled to review and respond to. Absent full analysis and disclosure, Staff cannot identify for the public and decision makers all of the potentially significant impacts associated with this change, and propose feasible mitigation and/or alternatives prior to Project approval. Thus, a revised PSA that addresses the potentially significant impacts to air quality and health from idling vehicles must be prepared and circulated for public review and comment.

2. Significant Impacts from On-Site Manufacturing Must Be Disclosed and Analyzed

The Applicant's July 1, 2008 supplement to the AFC proposes on-site manufacturing of solar panels during the construction phase of the Project. This will require a 40,000 square foot manufacturing building, including evaporative cooling and utility services. The Applicant states that the manufacturing building would rest on a foundation comprised of 6-inch reinforced concrete flooring.⁸⁶ However, elsewhere the Applicant indicates that hydraulic or pneumatic pile drivers would be required for construction of the temporary manufacturing building.⁸⁷ Construction and dismantling of the manufacturing building are estimated to take approximately four months each.⁸⁸ Unfortunately, impacts associated with construction of this building were not evaluated in the PSA.

The PSA also did not evaluate air pollutant emissions from the manufacturing process itself. The on-site manufacturing process involves a proprietary automated production cell to weld reflector frames for the solar panels and affix mirrors with polyurethane adhesive to the reflector frames.⁸⁹ According to the Supplement to the AFC, polyurethane was selected because it meets California VOC and HAP regulations for use in well ventilated buildings.⁹⁰ Despite the Applicant's acknowledgement that there will be emissions from on-site manufacturing, the PSA does not include any analysis of the manufacturing emissions whatsoever. Moreover, review of the Applicant's permit for its

⁸⁵ U.S. EPA, Health Assessment Document for Diesel Engine Exhaust, Report EPA/600/8-90/057F, May 2002.

⁸⁶ Supplement to AFC, p. 1-3.

⁸⁷ Supplement to AFC, Appendix F "Noise Data", Tables F-2 through F-20.

⁸⁸ Supplement to AFC, pp. 1-3-6.

⁸⁹ *Id.* at pp. 1-3-5.

⁹⁰ *Id.* at p. 1-5.

manufacturing plant in Las Vegas, Nevada shows that PM10 and VOC/HAP emissions from the robotics welding line and adhesive use can be substantial if not properly controlled.⁹¹ Thus, it is imperative that the PSA be revised to include an analysis of potentially significant impacts from on-site manufacturing.

B. The PSA Must Disclose and Analyze All Potentially Significant Impacts on Biological Resources

1. The Project Footprint Is Improperly Minimized and Thus Impacts to Plant and Wildlife Species Are Underestimated

The PSA states that the Project would permanently disturb 640 acres, and temporarily disturb the 380-acre construction laydown area.⁹² However, as discussed above, the proposed creek crossings and access road are *permanent*, not temporary, and will remain on the construction laydown area for the life of the Project.⁹³ Thus, 1,020 acres will be permanently impacted by the Project. As a result, analyses of impacts, and mitigation measures, should reflect *permanent* impacts to 1,020 acres, not 640 acres.⁹⁴ Otherwise, impacts to biological resources are unjustly diminished, and mitigation measures will not adequately address the true extent of impacts.

2. Significant Impacts to Special Status Plants Must Be Analyzed

The Applicant detected a single individual of pale-yellow layia (*Layia heterotricha*) on the Project site during 2008 surveys.⁹⁵ Pale-yellow layia is listed as a 1B.1 species by the California Native Plant Society, indicating that it is considered rare, threatened, or endangered. Despite this, the Applicant considered Project impacts to the species to be less than significant.

There are several flaws with the Applicant's assessment and conclusion, some of which are noted by Staff in the PSA. First, we agree with Staff that the Applicant's declaration that a single individual does not represent a population is incorrect⁹⁶ and contradicts conventional population ecology. Rather, there is a possibility that this individual represents a larger population of a rare species.⁹⁷

⁹¹ Nevada Department of Air Quality and Environmental Management, Authority to Construct/Operating Permit for a Nonmajor Surface Coating and Welding Operation, Ausra Manufacturing NV, LLC, March 28, 2008.

⁹² PSA, p. 4.2-10.

⁹³ *Id.* at p. 4.9-11.

⁹⁴ *Id.* at p. 4.2-15 (“the conservation of an adjacent area does not offset the 640-acre net loss of kit fox habitat”)

⁹⁵ *Id.* at p. 4.2-10.

⁹⁶ *Id.*

⁹⁷ *Id.*

Second, Staff is correct that “conditions were not conducive for germination and flowering in 2008.”⁹⁸ Data indicate that at some sites, populations of pale-yellow layia appear only in very wet years, and where they occur, populations are frequently highly colonial.⁹⁹ This information suggests that more pale-yellow layia plants may be present at the Project site than reported by the Applicant. Moreover, although the Applicant stated that surveyors visited reference populations during each survey period, no additional information was provided, such as the location of reference populations and the status of those populations at the time of the visits.¹⁰⁰ This information is crucial for evaluating the likelihood of detection during Project surveys.

Third, we agree with Staff that the Applicant’s assumption that impacts to a single individual are less than significant is incorrect.¹⁰¹ To be precise, an impact analysis must be conducted within the context of additional information, including overall population size and distribution, reproductive rate, and environmental constraints of the pale-yellow layia. For example, removal of the last individual of a population would be very significant (extinction), whereas removal of one individual from a very large population would be less significant.

Fourth, it appears that in 2007, the Applicant conducted only reconnaissance-level surveys for special-status plant species, and many of these surveys were conducted outside of the blooming period for potentially occurring species.¹⁰² Nonetheless, the Applicant concluded that “suitable habitat is not present for any of the special-status plants in the CESF project survey area.”¹⁰³ Further, although protocol-level rare plant surveys were finally conducted in 2008, the Applicant has yet to provide a valid and objective evaluation of the potential for rare plants to occur within the Project site.

Finally, we have concerns about Staff’s recommendation that the Applicant conduct special status plant species surveys in 2009, and develop a rare plant mitigation plan to be included in the Project’s Biological Resources Mitigation Implementation and Monitoring Plan (“BRMIMP”).¹⁰⁴ First, results of the 2009 protocol surveys, and an analysis of impacts to pale-yellow layia, must be included in a revised PSA that is circulated for public review and comment. Otherwise, the public will be unable to assess the information. Second, the BRMIMP is not required to be developed until 60 days prior to the start of Project-related ground

⁹⁸ *Id.*

⁹⁹ Elkhorn Slough Coastal Training Program. 2007. *Layia heterotricha* Fact Sheet. Available at http://www.elkhornsloughctp.org/factsheet/factsheet.php?SPECIES_ID=76

¹⁰⁰ 2008 Biological Surveys Report, p. 2.

¹⁰¹ PSA, p. 4.2-10.

¹⁰² AFC, p. 5.6-5.

¹⁰³ *Id.* at p. 5.6-10.

¹⁰⁴ PSA, p. 4.2-10.

disturbance activities.¹⁰⁵ Again, the public will be unable to evaluate the mitigation plan. Thus, the plan must be prepared now and included in a revised PSA.

Further, the rare plant mitigation plan should be tailored to the specific Project site, and be based on specific ecological knowledge of the pale-yellow layia and other relevant rare plant species. The plan should clearly describe implementation techniques and reporting procedures, the maintenance and monitoring program, success criteria, and the ability for adaptive management. We recommend that Staff and the Applicant review mitigation guidelines provided by the California Native Plant Society¹⁰⁶ for appropriate strategies in minimizing Project impacts to rare plants.

3. Significant Impacts to the American Badger Must Be Adequately Analyzed

The AFC reported that American badgers (*Taxidea taxus*) were commonly observed throughout the Project site, and that this species, as well as many badger dens, were observed in Section 28 of the Project survey area. As a result, CURE requested that the Applicant provide information regarding potential impacts to, and mitigation for, the American badger.¹⁰⁷ The Applicant responded by stating that potential impacts and proposed mitigation for the American badger would be provided in the 2008 survey report. However, the only information provided by the Applicant in the 2008 Biological Surveys Report was the following:

1. One American badger territory is persistent on Section 28. American badger territories are much larger than one square mile; therefore, it is assumed that one badger territory is present on Section 28 and may use portions of Section 33 of the CESF Project site. While several GPS points were taken to record badger activity, the area where the highest volume of activity was recorded is shown on Figure 1 to represent the location of the species.
2. Impacts to badger are anticipated to be significant due to permanent loss of 640 acres of habitat that accounts for a portion of one badger territory. 380 acres of temporary loss of badger habitat would be less than significant because the habitat will be returned to its original land use that currently supports badger.
3. Dedication of the agricultural easement for SJKF and pronghorn mitigation would provide habitat for badger. Proposed mitigation for potential loss of individual animals includes:

¹⁰⁵ *Id.* at p. 4.2-29.

¹⁰⁶ <http://www.cnps.org/cnps/archive/mitigation.pdf>

¹⁰⁷ See CURE Data Requests Nos. 22-23.

- The Applicant must retain a qualified biologist to survey the project site for the presence of the American badger no earlier than 3 days prior to any grading activity.
- If an active badger and its burrow is found onsite, a qualified biologist should be present to monitor the burrow during construction. It is likely that the badger will leave the site once construction begins. Because of the fierce nature of this species, it is recommended that the badger be allowed to leave on its own volition.

Staff should be aware that the Applicant did not conduct any home range or territory mapping, nor did the Applicant provide citations for the literature on which it based its conclusions regarding the number of territories or territory size. As a result, there is no scientific basis for the Applicant's or the PSA's assumption that the Project would affect only one badger territory.

Scientific literature provided by the California Department of Fish and Game indicate there is little information available on badger territories, but that badger home ranges can range from 25 to 1549 acres, depending on geographic location and season.¹⁰⁸ Even if the Applicant's assumption that badgers in the region have territories much larger than one square mile is correct, the belief that only one territory is located in the Project site is nothing more than a complete guess. It is basic ecological knowledge that territories: 1) are not confined to land ownership boundaries; 2) may or may not be contiguous; 3) may or may not overlap (i.e., be shared by more than one individual); and 4) are not static.

A basic example illustrating the Applicant's flawed assumption is depicted in the figure below. The figure incorporates the limited amount of information provided by the Applicant, namely that badgers were commonly observed throughout the Project area. The first image depicts the approximate home range assumed by the Applicant, and the second and third images depict other possible scenarios in accordance with ecological principles.

¹⁰⁸ California Wildlife Habitat Relationships System. 2005. California Department of Fish and Game. California Interagency Wildlife Task Group. CWHR version 8.1 personal computer program. Sacramento (CA).



Home range assumed by Applicant



Other home range scenarios



Other home range scenarios

Although the images above depict scenarios in which the Project site contains one to four home ranges, other scenarios exist, including scenarios where the site contains more than four home ranges.

Research suggests that the American badger is an area-dependent species with minimum patch size requirements.¹⁰⁹ Thus, mitigation measures must incorporate this knowledge in order to offset adverse impacts to the American badger. For example, suppose the scenario in which the Project eliminates a portion of each of four badger home ranges (as depicted in the third image). If the portions that remain are above the minimum patch size required by the species, then each individual has the potential to persist. However, if the portions that remain are below the minimum patch size required by the species, then each individual will perish. If we assume the possibility of the latter, and we accept the Applicant's proposed, unspecified agricultural easement as mitigation, the net result will be the loss of four badger home ranges (which may contain more than four individuals).

In addition, development in the construction laydown area will result in the permanent loss of 380 acres of badger habitat, contrary to the Applicant's claim that the impact in this area would be less than significant because the habitat will be returned to its original land use that currently supports badger. As noted in the PSA, the U.S. Fish and Wildlife Service ("USFWS") considers activities proposed for

¹⁰⁹ California Wildlife Habitat Relationships System. 2005. California Department of Fish and Game. California Interagency Wildlife Task Group. CWHR version 8.1 personal computer program. Sacramento (CA).

the laydown area to be a permanent impact.¹¹⁰ We agree with USFWS's assessment, particularly given the Applicant's failure to address the fate of badgers displaced by construction laydown activities.

Construction laydown activities will cause severe soil compaction. However, as noted by Staff, badgers require friable soil.¹¹¹ Thus, badgers are unlikely to be able to dig in the compacted soils. The Applicant has not provided any evidence that supports its statement that the laydown area will be restored to its original use. Thus, the PSA should include an analysis of the Project's potential to displace badgers, and provide a plan that describes how badger habitat variables will be restored after the laydown site is abandoned.

Finally, the Applicant concluded that dedication of the agricultural easement for San Joaquin kit fox and pronghorn mitigation would adequately provide compensation habitat for the American badger. We disagree. It cannot be assumed that mitigation lands for the kit fox and pronghorn will effectively mitigate impacts to the American badger. In order to implement an overlapping mitigation strategy, the PSA must provide an analysis demonstrating that the mitigation area is suitable for all of the target species, and that the impacts associated with each species will be completely offset by the mitigation strategy.

As proposed, the Applicant's mitigation strategy provides little assurance that Project grading activities will not result in direct impacts to badgers. Specifically, the Applicant proposes using only a single biologist to search for badger burrows immediately before grading activities. If a burrow is found, it appears that the biologist will simply watch the burrow during construction activities. The PSA does not provide any specific measures to guarantee that grading activities will not directly impact badgers. The PSA must provide measures that ensure that impacts to the American badger are avoided or minimized. Specifically, the measures must explain how a single individual will effectively locate all badger burrows before grading, particularly given the badger's potential to dig new burrows nightly.¹¹² Also, badger burrows can be long and deep, and therefore the mitigation strategy must provide information clarifying how the biologist will determine whether a burrow is occupied and thus warrants temporary avoidance.

Clearly, there is significant information that should be included in an analysis of the Project's impacts to the American badger, as well as information that must be considered for proposed mitigation measures. Thus, the PSA should be revised to include this information.

¹¹⁰ PSA, p. 4.2-15.

¹¹¹ PSA, p. 4.2-11.

¹¹² California Wildlife Habitat Relationships System. 2005. California Department of Fish and Game. California Interagency Wildlife Task Group. CWHR version 8.1 personal computer program. Sacramento (CA).

4. Significant Impacts to the Western Burrowing Owl Must Be Analyzed

We agree with Staff's conclusion that the Project could result in impacts to the western burrowing owl (*Athene cunicularia*).¹¹³ However, the PSA does not provide an analysis of the impacts. Without an analysis, it cannot be determined whether mitigation will reduce impacts to a less than significant level. Accordingly, the PSA must be corrected to include an analysis of impacts to the burrowing owl, and recirculated for public review and comment. We urge Staff to consider the following in its analysis and mitigation measures.

First, in order for Staff to perform an adequate analysis of impacts to burrowing owl, protocol-level surveys must be conducted to map and document the abundance and distribution of burrowing owls within the 1,020-acre Project site and associated buffer. In responses to CURE data requests, the Applicant stated that Project impacts to the burrowing owl will be identified based on the documented number of occupied burrows present.¹¹⁴ However, to date, the Applicant has not conducted the level of surveys necessary to document the abundance of owls using the site. Instead, the Applicant performed reconnaissance-level surveys.¹¹⁵

Further, the Applicant incorrectly concluded that additional surveys are not required because burrowing owls are known to be present on site.¹¹⁶ The mitigation guidelines outlined in the *Burrowing Owl Survey Protocol and Mitigation Guidelines*¹¹⁷ and the California Department of Fish and Game ("CDFG") *Staff Report on Borrowing Owl Mitigation*¹¹⁸ are based on the number of owls using a site (i.e. abundance). The absence of standardized survey methods have been identified by the CDFG as an impediment to consistent impact assessment and appropriate mitigation.¹¹⁹ Thus, in order for Staff to perform an adequate analysis of impacts to burrowing owl, the Applicant must conduct protocol-level surveys to map and document the abundance and distribution of burrowing owls within the 1,020-acre Project site and associated buffer.

Second, the data produced by the Applicant's reconnaissance-level surveys, in addition to that from incidental observations of burrowing owls, are inconsistent and misleading. For example, the AFC states that burrowing owls were detected in

¹¹³ PSA, pp. 4.2-11-12.

¹¹⁴ See Applicant's Response to CURE Data Request No. 28.

¹¹⁵ See Applicant's Response to CURE Data Request No. 29.

¹¹⁶ See Applicant's Response to CURE Data Request No. 28.

¹¹⁷ The California Burrowing Owl Consortium, *Burrowing Owl Survey Protocol and Mitigation Guidelines*, available at http://www.dfg.ca.gov/hcpb/species/stds_gdl/cird_sg/boconsortium.pdf.

¹¹⁸ C.F. Raysbrook, Department of Fish and Game, Memorandum, *Staff Report on Burrowing Owl Mitigation*, October 17, 1995.

¹¹⁹ *Id.*

both Sections 28 and 33 of the Project site during the 2007 surveys.¹²⁰ However, the 2008 survey report states that none were detected on Section 28 during either 2007 or 2008 surveys.¹²¹ This is clearly inconsistent with the information in the AFC.

Third, the PSA must analyze Project and cumulative impacts to burrowing owls from increased traffic. Burrowing owls have a relatively high tolerance for vehicular disturbance and, as a result, collisions with vehicles are a serious cause of mortality.¹²² It is well-documented that collisions with vehicles are often a serious cause of mortality for burrowing owls. Several studies reported that between 25% and 37% mortality of this species can be attributed to vehicle collisions.¹²³ On average, the three-year construction of the Project will generate approximately 188 vehicle trips per day, with a peak of 564 trips per day.¹²⁴ Operation of the Project will generate 75 employee vehicle trips per day.¹²⁵ Additional traffic will be generated by hazardous waste handlers and deliveries. Thus, impacts to burrowing owls from increased traffic would likely be significant. An analysis of such impacts must be included in a revised PSA.

Fourth, to avoid potential impacts to the burrowing owl, the PSA proposes passive relocation and mitigation in the form of artificial burrows at a ratio of 2:1.¹²⁶ The artificial burrows will be installed in an “adjacent protected area that provides a minimum of 6.5 acres per pair or solitary owl.”¹²⁷ However, there is no evidence that translocation will mitigate impacts to burrowing owls. Translocation of wildlife can have both positive and negative implications to the individuals released and the ecological community into which they are introduced.¹²⁸ With respect to burrowing owls, few studies have quantitatively studied the long-term effects of translocation, and those that have provide mixed results. Consequently, the rates of survival and reproduction of burrowing owls relocated to artificial burrows, as well as the long-term use of artificial burrows and the ability to maintain populations, are unknown.¹²⁹

¹²⁰ AFC, p. 5.6-12.

¹²¹ 2008 Biological Surveys Report, p. 10

¹²² K.F. Campbell, California Bureau of Land Management, Burrowing Owl, Athene cucularia, http://www.ca.blm.gov/pdfs/cdd_pdfs/Buow1.pdf.

¹²³ E.A. Haug, B.A. Millsap, M.S. Martell, Burrowing Owl (*Speotyto cucularia*), In: A. Poole and F. Gill (Eds.), The Birds of North America, No. 61, The Academy of Natural Sciences, Philadelphia, PA, 1993.

¹²⁴ PSA, p. 4.10-7.

¹²⁵ *Id.* at pp. 4.10-12-13.

¹²⁶ PSA, p. 4.2-32.

¹²⁷ *Id.* at p. 4.2-32.

¹²⁸ Mills L.S., J.J. Scott, K.M. Strickler, and S.A. Temple. Ecology and Management of Small Populations in Bookhout T.A., ed. Research and Management Techniques for Wildlife and Habitats. Fifth ed., rev. Bethesda (MD): The Wildlife Society.

¹²⁹ Klute D.S., L.W. Ayers, M.T. Green, W.H. Howe, S.L. Jones, J.A. Shaffer, S.R. Sheffield, T.S. Zimmerman. 2003. Status assessment and conservation plan for the western Burrowing Owl in the United States. Bio Tech Pub FWS/BTP-R6001-2003. Washington: US Fish and Wildlife Service. Available at <http://mountain-prairie.fws.gov/birds>.

Finally, both the *Burrowing Owl Survey Protocol and Mitigation Guidelines*¹³⁰ and *CDFG Staff Report on Borrowing Owl Mitigation*¹³¹ recommend that occupied burrows should not be disturbed during the nesting season (February 1 through August 21) unless a CDFG-approved qualified biologist verifies through non-invasive methods that either (1) the birds have not begun egg-laying and incubation or (2) that juveniles from the occupied burrows are foraging independently and are capable of independent survival. Thus, the PSA should require that pre-construction surveys be conducted in accordance with the specific measures outlined in the Burrowing Owl Consortium guidelines and the CDFG staff report.

5. Significant Impacts to the California Condor Must be Analyzed

We agree with Staff's statement that there is a possibility that the State and Federally endangered and fully protected California condor (*Gymnogyps californianus*) may be encouraged to return to the Carrizo Plains area.¹³² However, to at least some degree, it appears that Staff will be relying on the Applicant's condor data to base its assessment of potential impacts from the Project on the condor. Staff needs to be aware that the data provided by the Applicant is extremely misleading, fails to accurately depict condor use of the Project site, and does not absolve the potential for the Project to significantly impact the condor.

The Applicant concluded that the Project would not result in significant impacts to the California condor.¹³³ The Applicant cited GPS and radio-telemetry data in an attempt to demonstrate that the California condor does not use the Project site.¹³⁴ Specifically, the Applicant stated that the closest condor to the Project site was recorded in 1983, more than five sections away from the site.¹³⁵ In addition, the Applicant stated that there are no records of condors flying east over California Valley in the Carrizo Plains.¹³⁶ These statements are not accurate.

Thus, we urge Staff to consider the following information in its analysis of impacts to the condor:

We contacted Jesse Grantham, the Condor Coordinator for the USFWS, to obtain additional information on the condor data cited by the Applicant. Mr.

¹³⁰ The California Burrowing Owl Consortium, *Burrowing Owl Survey Protocol and Mitigation Guidelines*, available at http://www.dfg.ca.gov/hcpb/species/stds_gdl/cird_sg/boconsortium.pdf.

¹³¹ C.F. Raysbrook, Department of Fish and Game, Memorandum, *Staff Report on Burrowing Owl Mitigation*, October 17, 1995.

¹³² PSA, p. 4.2-11.

¹³³ See Applicant's Response to CURE Data Request No. 51.

¹³⁴ *Id.*

¹³⁵ *Id.*

¹³⁶ *Id.*

Grantham works at the Hopper Mountain National Wildlife Refuge, which the Applicant cited for its source of information in the 2008 Biological Surveys Letter Report and in response to CURE data requests numbers 51 and 52. Following is a discussion of the data provided by the Applicant, in the context of the information provided by Mr. Grantham.¹³⁷

a. GPS and Radio-telemetry Data Do Not Fully Account For Condor Use of the Project Site

The Applicant cited 2007 and 2008 radio-telemetry data from the USFWS Hopper Mountain National Wildlife Refuge to show that condors do not use the Project site.¹³⁸ However, Mr. Grantham confirmed that there are several reasons why the Applicant's data should not be relied on to conclude that condors do not use the Project site. At best, the telemetry data cited by the Applicant merely indicates that *the birds with radio transmitters* did not fly over the Project site *at the time when data was being collected*. According to Mr. Grantham, only about one third of all of the birds currently in the wild have transmitters, and many of these birds were outfitted with transmitters within the past year. In fact, Mr. Grantham indicated that the 2007 data cited by the Applicant may have originated from the tracking of only a couple of birds.

In addition, according to Mr. Grantham, of the birds with transmitters, transmitter data is not continuously collected, even when birds are being tracked. Like other federal agencies, the USFWS has suffered budget cutbacks which have affected the condor tracking program. In fact, Mr. Grantham indicated that he was unsure as to whether the USFWS was attempting to track condors in the Carrizo Plains during the time frame indicated by the Applicant. Moreover, the radio-telemetry database is not continuously updated, and at any given time, it likely only contains a portion of the data collected.

In addition, there is error associated with telemetry data. Error is dependent on the equipment being used, bird activity, topography, and environmental factors, among other variables. Given that multiple sources of error exist with respect to radio telemetry, Staff cannot assume that the data cited by the Applicant provides sufficient accuracy to determine that condors do not utilize the Project site.

Finally, the Applicant cited GPS data from 1910 to 1987 in an attempt to demonstrate that condors do not use the Project site.¹³⁹ However, GPS was not available until the early to mid 1990's. Thus, it is unclear what data the Applicant is referring to.

¹³⁷ Telephonic communication between Scott Cashen and Jesse Grantham, January 7, 2009.

¹³⁸ See Applicant's Response to CURE Data Request No. 51.

¹³⁹ See Applicant's Response to CURE Data Requests Nos. 51 and 52.

In reality, the data reported by the Applicant is only a small portion of the data available to perform a proper analysis of the Project and cumulative impacts on the California condor. According to Mr. Grantham, data from radio transmitters regarding the locations of birds has been collected since the 1980's, and data from GPS transmitters since 2005. As a result, the limited data reported by the Applicant should not be relied on as an accurate representation of condor use of the Project site, particularly given the condor's opportunistic nature and its tendency towards temporal shifts in foraging patterns.

Further, it is unclear whether the data provided by the Applicant represents two months (i.e. December 2007 and January 2008) or 24 months (i.e. January 2007 through December 2008). Nonetheless, even two years of data constitutes only a fraction of time for a wide-ranging species like the condor.

Finally, the data provided by the Applicant is vague. The figure provided by the Applicant in response to CURE's data request number 51 depicts 22 data points, apparently representing condor locations determined by radio telemetry. However, the Applicant failed to adequately describe or annotate these data points, leaving one to guess as to what they represent. As of November 30, 2008, there were 84 wild condors in the California population.¹⁴⁰ Therefore, the data might represent the locations of 22 birds (26% of the wild population) on a single day, the location of a single bird (1.2% of the population) on 22 days, or some combination of the two. Regardless, the data is clearly not adequate to base a determination on the condor's use of the Project site and vicinity and the potential for significant impacts.

b. The Project Site and Region Have Significant Historic and Current Value to the California Condor

The Recovery Plan for the California Condor¹⁴¹ ("Recovery Plan") identifies the region where the Project site is located as a "range of primary concern."¹⁴² Specifically, "most observations of feeding...occurred in the Elkhorn Hills-Cuyama Valley-Carrizo Plain complex...The majority of important foraging areas were on private cattle-grazing lands."¹⁴³ Further, the Recovery Plan states that "[t]ypical foraging behavior includes long-distance reconnaissance flights," and "[m]ost California condor foraging occurs in open terrain of foothill grassland and oak savannah habitats."¹⁴⁴

Most importantly, the Recovery Plan asserts that the preservation of key foraging habitat, including the Carrizo Plains, is necessary to the recovery of the

¹⁴⁰ http://www.dfg.ca.gov/wildlife/species/t_e_spp/condor/docs/StatusReport-11-30-08.pdf

¹⁴¹ Recovery Plan for the California Condor, U.S. Fish and Wildlife Service, April 1996.

¹⁴² *Id.* at pp. 2-3.

¹⁴³ *Id.* at p. 6.

¹⁴⁴ *Id.* at pp. 5-6.

condor.¹⁴⁵ Specifically, the Recovery Plan identifies the Carrizo Plains as historical condor range that is essential to the species' recovery.¹⁴⁶ As a result, the Recovery Plan recommends that private inholdings remaining in the Carrizo Plains be purchased for condor recovery.¹⁴⁷ Additionally, the Recovery Plan states that due to pressure to develop land within the historical condor foraging range, which includes the Carrizo Plains, it is imperative to assess potential threats to the condor and "develop alternatives that will not negatively affect the survival of the wild condor."¹⁴⁸

Further, reintroduction of the California condor to the area is not speculative, as suggested by the Applicant.¹⁴⁹ Since the 1970's, great efforts have been made to restore the condor population through a captive breeding and release program.¹⁵⁰ Condor reintroduction has already occurred in the Project area. In 1996, two condors were released at Castle Crags, San Luis Obispo County, approximately 50 miles from the Project site.¹⁵¹ In addition, California condors are found in the Carrizo Plain National Monument, approximately ten miles from the Project site.¹⁵²

In addition, the Applicant incorrectly concluded that (1) cattle management practices minimize the availability of food resources suitable for condors, and (2) because of the Project's small size, as compared to the flight range of condors, loss of foraging habitat on the Project site would not significantly impact the condor.¹⁵³ To the contrary, condors are opportunistic scavengers that feed on many things, including cattle, mule deer, tule elk, pronghorn antelope, and smaller mammals.¹⁵⁴ These food items are present on the Project site and therefore, cattle management practices will not bar condor foraging on the Project site.

In addition, as opportunistic foragers, condors are expected to take advantage of local abundance of food anywhere within their normal range, regardless of plot size.¹⁵⁵ This demonstrates a classic resource-dependent relationship, not an area-dependent relationship, as suggested by the Applicant. Some species are thought to be area-dependent, and will not occur on a site if the size is below a certain threshold. Other species are resource-dependent, and will occur on a site of any size, as long as a minimum threshold of resources is met. The condor is clearly

¹⁴⁵ *Id.* at p. 28.

¹⁴⁶ *Id.*

¹⁴⁷ *Id.*

¹⁴⁸ *Id.* at p. 30.

¹⁴⁹ See Response to CURE's Data Request No. 51.

¹⁵⁰ Recovery Plan for the California Condor, p. 14.

¹⁵¹ <http://digital.repository.fws.gov>.

¹⁵² <http://www.blm.gov/ca/st/en/fo/bakersfield/Programs/carrizo/birds.html>.

¹⁵³ See Response to CURE Data Request No. 51.

¹⁵⁴ Recovery Plan for the California Condor, p. 6.

¹⁵⁵ *Id.* at p. 5.

resource-dependent, traveling up to 150 miles for food,¹⁵⁶ which may be one cow or one pronghorn on a very small plot of land. Thus, the Applicant's assumption that condors will not be impacted by the Project because the site is relatively small, is incorrect.

In sum, the California condor is a State and Federal endangered and fully protected species, which is in the process of recovery. Literature shows that the Project site provides suitable condor foraging habitat, and recovery efforts demonstrate that that population will continue to expand. The Project site lies within the condor's range of historic occurrence that has been identified as having key foraging resources. The Project site has documented wildlife, which may provide food sources for the condor. As a result, the Project has the potential to significantly impact the condor. Thus, we strongly urge Staff to prepare a revised PSA that contain a comprehensive and factual analysis based on all available data of the Project's potential direct, indirect, and cumulative impacts on the condor. Specifically, the analysis should contain an assessment of food resources beyond cattle, and the context of these resources in relation to other food resources potentially available in the region.

6. The Proposed Transmission Lines Pose a Significant Impact to Birds that Must be Disclosed, Analyzed and Mitigated

The Project includes construction of two double-circuit 230 kV overhead transmission lines, approximately 850 feet and 90 feet in length.¹⁵⁷ The PSA acknowledges that “[t]ransmission lines are known to be a collision and/or electrocution threat to birds.”¹⁵⁸ However, the PSA concludes that because the transmission line that would need to be constructed is short (i.e., 90 feet), its construction would not significantly impact biological resources.¹⁵⁹ The PSA further concludes that “the transmission lines would not pose a significant electrocution threat to bird populations.”¹⁶⁰

The PSA's analysis of significant impacts from transmission lines is inadequate and should be corrected for three reasons: (1) it fails to evaluate the 850-foot transmission line; (2) the transmission line construction and electrocution sections contain no analysis; and (3) the mitigation included in condition of certification Bio-7 proposed to reduce electrocution impacts is non-specific. Thus, impacts to birds from collision and electrocution remain significant.

¹⁵⁶ <http://www.cvm.umn.edu/raptor/info/Condor.html>

¹⁵⁷ PSA, p. 3-3.

¹⁵⁸ *Id.* at p. 4.2-18.

¹⁵⁹ *Id.*

¹⁶⁰ *Id.* at p. 4.2-20.

The PSA must analyze potentially significant impacts to birds from collisions with all newly constructed transmission lines, including the 850-foot transmission line. Staff's assumption that the transmission line would not significantly impact birds is not supported by any evidence. To the contrary, literature suggests that transmission lines pose a significant threat to birds.¹⁶¹

Of particular concern are the documented impacts from collision with transmission lines on the fully protected California condor. The Recovery Plan documents five deaths of condors released between 1989 and 1996.¹⁶² Between May and October 1993, three juvenile condors died when they collided with transmission lines.¹⁶³ The Recovery Plan maintains that all companies planning the construction of transmission lines “should be advised on the most favorable location of such structures *from the standpoint of the condor*, as well as measures that can be implemented that will help avoid possible condor mortalities.”¹⁶⁴

Thus, a revised PSA should provide specific mitigation measures to reduce significant impacts from collision with transmission lines. These mitigation measures should take into account impacts to the California condor and specifically address how such impacts will be avoided or minimized. We recommend that the PSA require the undergrounding of the entire length of the transmission lines up to their interconnection with existing lines to mitigate these significant impacts.

7. Collision with Project Structures Poses a Significant Impact to Birds that Must be Disclosed, Analyzed and Mitigated

CURE's data request number 37 requested that the Applicant provide a discussion of bird collisions with Project structures. In response, the Applicant argued that the Project would not result in significant impacts to birds from collisions with Project structures because (1) the Project is not located in an area that would “concentrate migratory birds;” (2) the Project structures are low-rise; and (3) with the exception of the administration building, the Project structures lack windows and night lighting. The Applicant's argument is severely flawed.

First, the Project site is located within the Pacific Flyway, migratory birds are documented on site, and the site is located between two mountain ranges which

¹⁶¹ M.L. Avery, P.F. Springer, and N.S. Dailey, *Avian Mortality at Man-made Structures: An Annotated Bibliography (Revised)*; U.S. Fish and Wildlife Service, Biological Services Program, National Power Plant Team, FWS/OBS-80/54, 152, pp. 1980; E. Hebert, E. Reese, L. Mark, R. Anderson, J.A. Brownell, R.B. Haussler, and R.L. Therkelsen, *Avian Collision and Electrocutation: An Annotated Bibliography*, California Energy Commission, P700-95-001, October 1995; J.L. Trapp, *Bird Kills at Towers and Other Human-Made Structures: An Annotated Partial Bibliography (1960-1998)*, U.S. Fish and Wildlife Service, Office of Migratory Bird Management, June 10, 1998.

¹⁶² Recovery Plan for the California Condor, U.S. Fish and Wildlife Service, April 1996, p. 11.

¹⁶³ *Id.* at p. 32.

¹⁶⁴ *Id.* (emphasis added)

may funnel birds through the Project area. Second, the Project site and region is specifically identified in the California condor Recovery Plan. According to the Recovery Plan, “sufficient remaining habitat exists in California...to support a large number of condors, if density independent mortality factors, including...collisions with man-made objects, can be controlled.”¹⁶⁵

Third, the Project structures are not low-rise. The Project includes two 115-foot high air cooled condensers, which is the approximate equivalent to a ten story building. In addition, the solar field includes one hundred ninety-five 56-foot tall receivers and associated guy wires, as well as one hundred ninety-five rows of mirrors that are 1,268 feet in length by 90 feet in width.¹⁶⁶

Finally, mortality resulting from birds striking windmills, buildings, towers, and other man-made, elevated structures has been well documented in the scientific literature.¹⁶⁷ Several reports cite bird collisions with structures that do not have windows and which may or may not be lit, such as smokestacks and communication towers.¹⁶⁸

The PSA correctly asserts that “birds could collide with...project facilities,” and the “guy wires may pose a collision threat.”¹⁶⁹ However, the PSA then states that Staff will discuss collision impacts and proposed mitigation measures in the FSA.¹⁷⁰ This is unacceptable. CEQA mandates that an environmental document include sufficient analyses so as not to deprive the public of a meaningful opportunity to comment upon a substantial adverse environmental effect of the Project.¹⁷¹ Thus, the PSA should be revised to include an analysis of collision impacts to birds, and the PSA should be re-circulated for public review and comment.

8. Significant Bird Mortality Impacts from Heat Must Be Analyzed

The PSA correctly recognizes that the Project poses “potential impacts to wildlife, including exposure to elevated temperatures and solar radiation.” However, the PSA states that “the effects of this type of solar collector on wildlife

¹⁶⁵ Recovery Plan for the California Condor, p. v.

¹⁶⁶ AFC, p. 3-5.

¹⁶⁷ US Fish and Wildlife Service, Office of Migratory Bird Management. 1998. Bird kills at towers and other human-made structures: An annotated partial bibliography (1960-1998); available at <http://www.fws.gov/migratorybirds/issues/tower.html>.

¹⁶⁸ Erickson, W.P., Johnson, G.D., and Young, D.P. Jr. 2005. A Summary and Comparison of Bird Mortality from Anthropogenic Causes with an Emphasis on Collisions. USDA Forest Service Gen. Tech. Rep. PSW-GTR-191.

¹⁶⁹ PSA, p. 4.2-19.

¹⁷⁰ *Id.* at p. 4.2-20.

¹⁷¹ CEQA Guidelines § 15088.5.

are currently unknown.”¹⁷² Therefore, the PSA provides only a cursory analysis of heat impacts to birds, without any supporting evidence.

We strongly urge Staff to demand information from the Applicant regarding its technology and data regarding heat. The PSA assumes that because the Project’s technology is different from that of the Solar One study, the Project “would impact wildlife in a different manner.”¹⁷³ However, the PSA does not provide any literature to support the claim that the heat produced by the Project will not burn birds. Certainly, the Project structures will heat up immensely in the full sun during the summer in the Carrizo Plains. The Project should not be allowed to proceed without full disclosure regarding its heat effects, generally, and its impacts from burning wildlife, in particular.

A revised PSA should not only include a revised analysis, but it should also include a data collection and monitoring plan to collect relevant data and to enable an ongoing analysis of heat impacts on birds. In addition, the revised PSA should include mitigation measures to avoid impacts to birds from heat should the Applicant discover that heat generated by the Project poses significant impacts to birds.

9. Significant Impacts to Wildlife from Project Lighting Must Be Disclosed and Analyzed

The PSA states that “there will be no significant impacts to sensitive species from the lighting associated with construction and operation of the new facility if Condition of Certification **BIO-7**...is implemented.”¹⁷⁴ The PSA’s conclusion is flawed for two reasons: (1) analyses of the lighting plan and glint and glare study have not yet been performed,¹⁷⁵ and therefore impacts from lighting have not been fully assessed; and (2) condition of certification Bio-7 is uncertain and lacks specificity.¹⁷⁶ Bio-7 states that the Applicant shall “design, install, and maintain facility lighting to prevent side casting of light towards wildlife habitat.”¹⁷⁷ Instead, the PSA should provide specific measures to avoid or minimize lighting impacts to a less than significant level. For example, all exterior lighting should be directed away from wildlife habitats, and should be adequately shielded with plant materials and berming to protect sensitive species from night lighting. In addition, the light structures themselves should provide shielding from wildlife habitats and should be placed in such a way as to minimize the amount of light reaching adjacent habitats.

¹⁷² PSA, p. 4.2-19.

¹⁷³ *Id.*

¹⁷⁴ PSA, p. 4.2-18.

¹⁷⁵ *Id.* at p. 4.12-16.

¹⁷⁶ *Id.* at p. 4.2-30 (“Design, install, and maintain facility lighting to prevent side casting of light towards wildlife habitat.”)

¹⁷⁷ *Id.*

Currently, it is unknown whether the proposed mitigation for lighting impacts on wildlife will be effective, and therefore, whether impacts will be minimized to a less than significant level. Thus, Project lighting remains a significant impact to wildlife.

10. Significant Impacts on Wildlife from Increased Traffic Must Be Analyzed

We agree with Staff that biological resources will be impacted from Project traffic.¹⁷⁸ However, the PSA states that the traffic impacts to biological resources from the construction and operation of the Project, and appropriate mitigation, will be discussed in the FSA.¹⁷⁹ This approach does not comply with the substantive requirements of CEQA.

We urge staff to prepare an analysis of significant traffic impacts on biological resources, to identify mitigation, and to include such information in a revised PSA that is recirculated for public review and comment. Road-kill is the greatest directly human-caused source of wildlife mortality in the United States, with more than one million vertebrates killed each day.¹⁸⁰ Because the Project will cause an increase in traffic in a extremely sensitive and biologically productive area,¹⁸¹ road-kill mortality will increase as well. Accordingly, impacts to wildlife from increased traffic must be analyzed in a revised PSA that is recirculated to allow the public to evaluate the impacts, provide comments, and propose mitigation measures.

11. Significant Impacts to Wildlife from the Carrisa Creek Crossings Must Be Analyzed

The Soil and Water Resources section of the PSA states that “[p]lacing culverts and fill to create two permanent creek crossings of a jurisdictional channel...could result in significant impacts to wildlife that utilize the Carrisa Creek for habitat and migration pathways.”¹⁸² Further, according to the Applicant, “[s]pecies such as pronghorn, kit fox, and condor use the habitat within the Carrizo Plain where this drainage flows. The presence of these species, which rely on this water flowing through the Plain, indicates that this major drainage has a significant biological effect.”¹⁸³ However, there is no analysis of potentially significant impacts to biological resources from the creek crossings. Accordingly, the PSA must be corrected and recirculated for public review and comment.

¹⁷⁸ PSA, p. 4.2-18.

¹⁷⁹ *Id.* at pp. 4.2-19-20.

¹⁸⁰ Lalo, J. 1987. The problem of roadkill. *American Forests* (Sept.-Oct.): 50-52.

¹⁸¹ PSA, pp. 4.2-19-20.

¹⁸² PSA, p. 4.9-19.

¹⁸³ Letter from Downey Brand LLP to USACE, November 7, 2007, p. 3.

A revised analysis of impacts to biological resources from creek crossings should include potentially significant impacts to the western spadefoot toad, a California Species of Special Concern. In 1991, a spadefoot toad breeding site was documented a few miles downstream of the Project site.¹⁸⁴ There is ample evidence in the literature that exposure to chemicals, including leaks and spills from motor vehicles, leads to the decline and threat to the survival of the western spadefoot toad.¹⁸⁵ The permanent creek crossings are proposed to involve the placement of fill in the creek and will allow vehicle uses adjacent to and over the creek. Thus, the crossings may result in potentially significant impacts to western spadefoot toad and its habitat, in addition to other species in the area.

C. The PSA Must Disclose and Analyze Potentially Significant Land Use Impacts

1. The PSA Minimizes the Project Footprint and thus Underestimates Impacts from the Conversion of Farmland

The PSA states that the Project would permanently convert 640 acres from agricultural use to solar power plant use, and the 380-acre construction laydown area would be returned to its original state.¹⁸⁶ As a result, the 380-acre laydown area was not included in the LESA analysis.¹⁸⁷ However, as discussed above, the proposed creek crossings and access road are *permanent*, and will remain on the construction laydown area for the life of the Project.¹⁸⁸ Thus, 1,020 acres will be permanently impacted by the Project. As a result, analyses and mitigation measures should reflect impacts from the conversion of 1,020 acres of Farmland of Local Importance, not 640 acres.¹⁸⁹

D. Potentially Significant Socioeconomic Impacts Must Be Disclosed and Analyzed

The Carrizo Plain National Monument is a protected refuge for many plant and animal species that inhabit the Carrizo Plain area, including the San Joaquin kit fox, pronghorn antelope, and tule elk.¹⁹⁰ The Wilderness Society recently presented a study that evaluates the benefits to local economies from the presence

¹⁸⁴ See CNDDDB.

¹⁸⁵ ¹⁸⁵ USFWS. 2005. Recovery Plan for Vernal Pool Ecosystems in California and Southern Oregon, p. II-233 (hereinafter “Vernal Pool Recovery Plan”) available at http://ecos.fws.gov/docs/recovery_plans/2006/060307_docs/doc533.pdf.

¹⁸⁶ PSA, p. 4.5-7.

¹⁸⁷ *Id.* at p. 4.5-8.

¹⁸⁸ *Id.* at p. 4.9-11.

¹⁸⁹ *Id.* at p. 4.5-9.

¹⁹⁰ See <http://www.blm.gov/ca/st/en/fo/bakersfield/Programs/carrizo/self-guided-tour/text.html>

and protection of the Carrizo Plain National Monument.¹⁹¹ Specifically, the report highlights the importance of protecting the Carrizo Plain National Monument for “the future economic health of local and regional communities.”¹⁹² The report concludes that for the local communities to receive the greatest economic benefits from tourism and the growth of local businesses, the attractiveness of the Carrizo Plain National Monument must be enhanced through the protection of the natural attributes of the area.¹⁹³

The Project site is at the south end of a San Joaquin kit fox corridor linking the Carrizo Plains National Monument to the Salinas River and Pajaro River watersheds.¹⁹⁴ Potential impacts to the kit fox from the proposed Project include loss of habitat, reduced connectivity, and increased exposure to predation and traffic.¹⁹⁵ In addition, the Project site will impact the movement and habitat of pronghorn antelope and tule elk, threatening these species’ viability.¹⁹⁶ According to CDFG, maintaining connectivity between the pronghorn and tule elk groups on the Project site with groups in the Carrizo Plain National Monument is essential to maintaining the overall San Luis Obispo County pronghorn and tule elk populations.¹⁹⁷

Because the proposed Project will substantially impact the San Joaquin kit fox, pronghorn antelope, and tule elk populations in the area, including the groups in the Carrizo Plain National Monument, through loss of connectivity, the integrity of the Carrizo Plain National Monument will be compromised. According to the Wilderness Society, degradation of the natural attributes of the Carrizo Plain National Monument will impact the local economy. Therefore, the proposed Project has the potential to negatively impact the future health of the local economy.

For these reasons, we urge Staff to recognize these documented and current socioeconomic benefits and revise the PSA to include an analysis of Project and cumulative impacts on the local economy due to the the loss of connectivity between populations of the San Joaquin kit fox, pronghorn antelope, and tule elk populations in the Carrizo Plain National Monument, the Project site, and other populations in the area.

¹⁹¹ See Haeefe, M., et al. 2008. The Carrizo Plain National Monument: A Stunning Area Sustaining Vibrant Communities. The Wilderness Society.

¹⁹² Haeefe, M., et al. 2008. The Carrizo Plain National Monument: A Stunning Area Sustaining Vibrant Communities. The Wilderness Society, p. 5.

¹⁹³ *Id.* at p. 40.

¹⁹⁴ See December 31 memorandum from California Department of Fish and Game to the California Energy Commission re: Review of Carrizo Solar Energy Farm Preliminary Staff Assessment.

¹⁹⁵ *Id.*

¹⁹⁶ *Id.*

¹⁹⁷ *Id.*

E. The PSA Must Disclose and Analyze Potentially Significant Impacts to Water Resources

1. The PSA Must Clarify Whether the Project Will Result in Significant Impacts to the Groundwater Supply

The PSA declares that “Staff has identified several issues that could lead to potentially significant impacts,” including the significantly underestimated water supply needed for construction.¹⁹⁸ However, the PSA later concludes that “[t]he proposed use of groundwater for the project’s process and potable water needs would not cause a significant adverse environmental impact or affect current or future users of groundwater.”¹⁹⁹ Clearly, these two statements are conflicting. Considering that the Carrizo Plains groundwater supply is in overdraft,²⁰⁰ a revised PSA must clarify whether the Project will have significant impacts to the area’s groundwater supply.

2. The PSA Must Analyze Significant Impacts to Soda Lake

The biological resources section of the PSA explains how the Project may result in significant impacts to Soda Lake:

Soda Lake in the Carrizo Plain National Monument could also be potentially impacted by construction activities in Carrisa Creek. Water quality in Carrisa Creek and Soda Lake could be impacted by discharge of materials released during construction, or by migration of any existing toxic materials present in the subsurface soils and groundwater into stormwater runoff from the project site...Staff’s *Soil and Water Resources* analysis provides a more detailed discussion of potential soil, water quality, and aquifer recharge issues...²⁰¹

However, the Soil and Water Resources section of the PSA contains no analysis of this potentially significant impact.

We agree with Staff that the placing fill in the creek channel could cause flooding upstream of the crossings.²⁰² However, it is imperative that a revised PSA also provide an analysis of the impact downstream to Soda Lake from the discharge of materials in the channel.

¹⁹⁸ PSA, p. 4.9-1.

¹⁹⁹ *Id.* at p. 4.9-2.

²⁰⁰ *Id.* at p. 4.9-5.

²⁰¹ *Id.* at pp. 4.2-17-18.

²⁰² *Id.* at p. 4.9-19.

Soda Lake is “the largest remaining natural alkali lake” in the Carrizo Plains area, and it is “the only closed basin within the coastal mountains.”²⁰³ According to the Applicant, Carrisa Creek is “the largest drainage in the watershed,” and “one of only a few major drainages in the watershed that flows directly into, and provides water for, Soda Lake.”²⁰⁴ Thus, “whatever goes into the major drainage will go into the lake.”²⁰⁵ Carrisa Creek “has direct and significant chemical, physical, and biological effects on both Soda Lake and the Carrizo Plain watershed in general.”²⁰⁶ The Applicant further states that “the physical impact on Soda Lake and the watershed is obvious: less water in this major drainage means less water in Soda Lake.”²⁰⁷ In sum, “[t]he drainage has a direct relationship with the lake, and its impacts on the lake’s ecology and the surrounding watershed are neither ‘speculative’ nor ‘insubstantial’.”²⁰⁸

For these reasons, we urge Staff to prepare a revised PSA that provides the public with an analysis of the Project’s impacts to Soda Lake for review and comment.

F. Potentially Significant Impacts on Visual Resources Must Be Disclosed and Analyzed

The PSA states that Staff is still evaluating the visual impacts of the Project on the northern Carrizo Plain, and thus Staff cannot conclude that the Project will comply with all applicable laws, ordinances, regulations, and standards pertaining to visual resources.²⁰⁹ More specifically, Staff was unable to make a determination regarding the Project’s potential introduction of glint or glare to the northern Carrizo Plain.²¹⁰ Staff anticipates that additional visual impact analyses will be contained in the FSA.²¹¹

Deferring identification and analysis of impacts and mitigation measures to the FSA defies CEQA’s basic purposes: (1) to inform decision makers and the public about the potential, significant environmental effects of a project; and (2) to avoid or reduce environmental damage when possible by requiring alternatives or mitigation measures.²¹² Thus, the PSA must be revised to include those visual impact

²⁰³ Presidential Proclamation 7393, Establishment of the Carrizo Plain National Monument (January 17, 2001).

²⁰⁴ Letter from Downey Brand LLP to USACE, November 7, 2007, p. 2.

²⁰⁵ *Id.* at p. 4.

²⁰⁶ *Id.* at p. 3.

²⁰⁷ *Id.* at p. 4.

²⁰⁸ Letter from Downey Brand LLP to USACE, November 7, 2007, p. 4.

²⁰⁹ PSA, pp. 4.12-25-26.

²¹⁰ *Id.* at p. 4.12-26.

²¹¹ *Id.* at p. 4.12-25.

²¹² CEQA Guidelines, § 15002(a)(2) and (3).

analyses absent from the PSA, and must be circulated for public review and comment.

We urge Staff to consider the following information in its revised analyses:

The Project is located in the Carrizo Plains, just northwest of California Valley and within ten miles of the Carrizo Plain National Monument (See Figure 1 below). The Carrizo Plains is a large, enclosed plain, approximately 50 miles long and 15 miles wide. Bordering the plain to the northeast is the Temblor Range, to the west is the La Panza Range, and to the southwest is the Caliente Range. The AFC states that “[t]he general area is characterized as relatively flat allowing for open, expansive views of hills and mountains surrounding the valley.”²¹³ Expansive views of agricultural fields, foothills, and mountain profiles are characteristic of the area, and because the views are largely unspoiled, the Carrizo Plains remain unique.

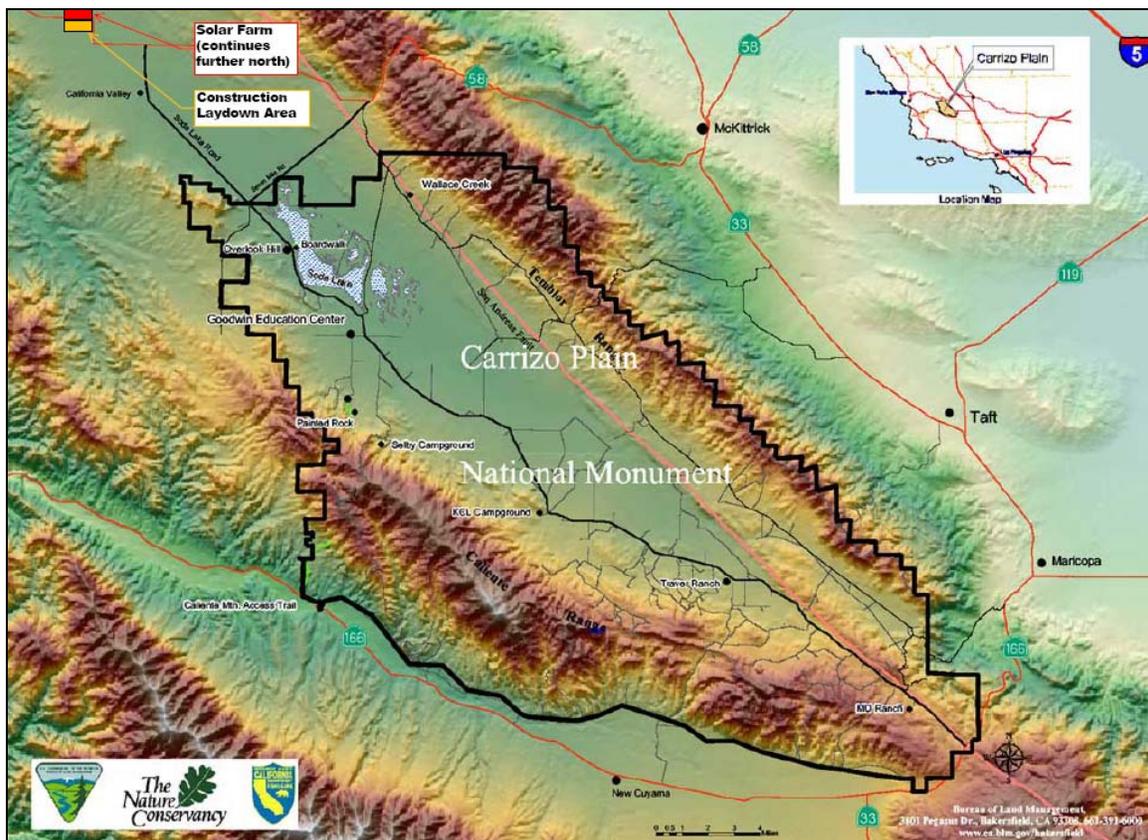


Figure 1: Project location in relationship to Carrizo Plain National Monument.²¹⁴

²¹³ AFC, p. 5.13-2.

²¹⁴ Source for map”

<http://www.blm.gov/ca/st/en/fo/bakersfield/Programs/carrizo/carrizomonumentmap.html>

In addition, the Carrizo Plains is one of the sunniest places in California, and was utilized by the solar power industry from 1983 to 1994.²¹⁵ Dubbed “Solar Valley,”²¹⁶ the Carrizo Plains will undoubtedly be the target of future developers for other solar energy projects. Moreover, the Project area has been identified as a solar Competitive Renewable Energy Zone in California.

The Project includes construction of 195 solar concentrating lines, including 195, 56-foot tall receivers mounted above the valley floor, two 115-foot tall condensers, and 150-foot tall transmission lines.²¹⁷ Construction of the Project in the wide-open and sparsely populated Carrizo Plains would substantially change the visual character of the area. However, as shown below, the Project’s potentially significant visual impacts have been grossly underestimated by the Applicant.

1. The Applicant’s Simulated Views May Be Unrealistic and Do Not Account for Temporal and Seasonal Variability

First, the simulated views presented by the Applicant are inconsistent with other materials published by Ausra on its corporate website.²¹⁸ Two sets of images are provided below for comparison:



Figure 2: Simulated View of CESF From Key Observation Point No. 2, Carrizo Energy Solar Farm (CESF), AFC Figure No. 5.13-15.

²¹⁵ Adjacent to the proposed Project is the former ARCO solar plant, which at the time was the largest photovoltaic array in the world, with 100,000 1'x 4' photovoltaic arrays. The ARCO plant was originally constructed in 1983 and was dismantled in the early 1990s by Carrizo Solar Corporation.

²¹⁶ <http://www.iht.com/articles/2008/02/17/technology/PING.php>

²¹⁷ PSA, p. 4.12-6.

²¹⁸ <http://ausra.com>



Figure 3: Untitled image available on the Ausra website.²¹⁹



Figure 4: Untitled image available on the Ausra website.²²⁰

Figures 3 and 4, taken at Ausra’s Kimberlina facility, depict a hazy glare to be evident when the facility is viewed from an oblique angle. However, the hazy glare is absent in the simulated view from key observation point No. 2 established at the closest residence to the western border of the Project (Figure 2).

²¹⁹ <http://www.ausra.com/img/kimberlina00011.jpg>

²²⁰ <http://ausra.com/img/kimberlina04011.jpg>

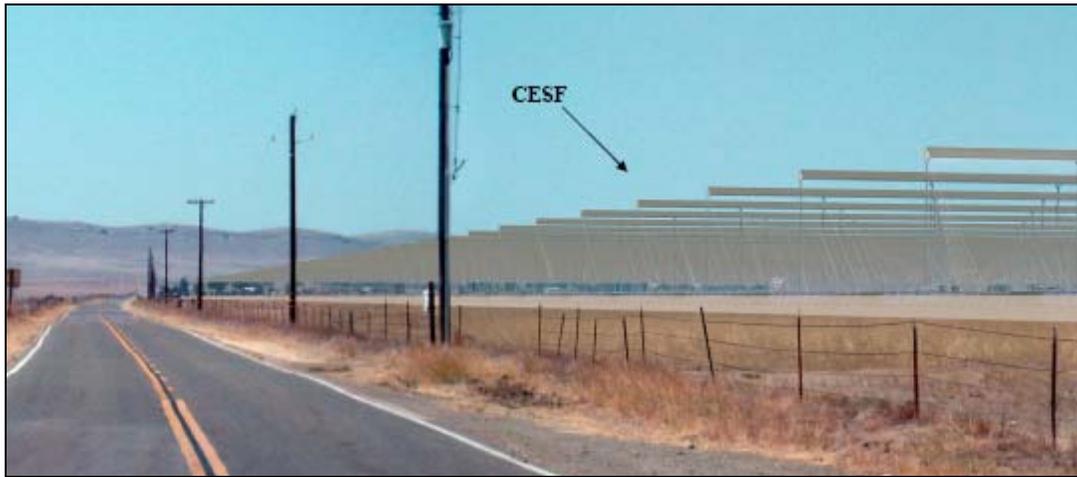


Figure 5: Simulated view (cropped) of CESF From Key Observation Point No. 3 (West), Carrizo Energy Solar Farm (CESF), Figure No. 2.13-4 in the Supplement to the AFC.



Figure 6: Untitled image available on the Ausra website.²²¹

In the simulated view west of key observation point No. 3 (Figure 5), the glare from the underside of the linear collectors appears to be underrepresented when compared to the photograph from the Ausra website (Figure 6). This is particularly concerning when considering the motorists traveling westbound or eastbound on Highway 58 who will gaze in a northerly direction at the linear collectors, and who may be startled or perhaps even temporarily blinded by the glare, as a result.

The Applicant's glint and glare study does not address hazards to individuals who may stare at the linear reflectors, as a motorist might do. Additionally, interested travelers may be inclined to stop on the side of the highway to view what

²²¹ <http://www.ausra.com/img/kimberlina4041l.jpg>

may be considered an attraction. Also, the study assesses the glare impacts from viewing one receiving pipe as equivalent to an intensity 50 times less than that of the sun. However, the study does not assess the intensity that an individual would be subjected to when viewing multiple collectors at one time, as a motorist might do.

We recommend that the Applicant provide Staff with information about the graphics software that was used, along with data input files, for independent confirmation of how representative the images would be of the Project upon completion. We also recommend that the Applicant render additional simulated images at key observation points, including motorists' views and views from Highway 58. These observation points should depict conditions at different times of the day and during different seasons. This information is key to Staff's assessment of the potentially significant visual impacts posed by the Project, particularly the glare that motorists will encounter.

2. Potentially Significant Individual and Cumulative Visual Impacts to the Carrizo Plains National Monument Must Be Disclosed and Analyzed

The AFC states that:

no significant views of the site would be available from the Carrizo Plain National Monument. This is largely due to distance; however, the majority of recreational activities within the National Monument surround Soda Lake. Soda Lake is at a lower elevation than the CESF site and is a significant distance away (approximately 9.0 miles southeast from the site).²²²

Our analysis reveals different results. Rather, the Project will be visible from the Carrizo Plains National Monument. In a January 12, 2009 telephone conversation, Johna Hurl, the Carrizo Plains National Monument Manager, stated that the CESF would be visible from the monument, most notably from Caliente Peak and from the Temblor Range. Caliente Peak is located approximately 25 miles southeast of the Project, and at an elevation of 5106 feet, is the highest peak in San Luis Obispo County. Caliente Peak is popular with hikers and hunters. The Temblor Range is located within the Carrizo Plains National Monument, approximately 15 miles southeast of the Project. According to Ms. Hurl, visitors hiking in the Wallace Creek area of the Temblor Range would have an unobstructed view of the Project.

Further, the visual sphere of influence ("VSOF") utilized by the Applicant in the AFC shows only the visual impacts within a five-mile radius of the Project. Specifically, the AFC states:

²²² AFC, p. 5.13-5.

The VSOI for the CESF (Figure 5.13-1) represents the area within which the Project could be seen and potentially result in significant impacts to visual resources. The furthest distance at which potentially significant visual impacts could occur was identified as five miles. This distance was based primarily on the Project description regarding the potential visibility of major Project components (e.g., structures within the power block as well as the boundary of the solar farm) from sensitive viewing areas.²²³

Moreover, the VSOI was prepared to depict only the Project, and failed to include either OptiSolar's Topaz Solar Farm or the SunPower project.²²⁴ Together, the three solar projects will create an approximately 15 square mile footprint. If these three projects are completed, the Carrizo Plains will house the largest collection of solar photovoltaic and solar thermal plants in the world.

Given the scenic value of the arid and remote area of the Carrizo Plains National Monument, the VSOI must be expanded to include the vistas from the monument, and it must consider the cumulative footprint of the three planned solar facilities. Thus, we recommend the establishment of a number of key observation points within the Carrizo Plains National Monument, including Caliente Peak and the Temblor Range in the vicinity of Wallace Creek. Simulated views from the key observations points within the Carrizo Plains National Monument should incorporate not only the Project, but also OptiSolar's Topaz Solar Farm and the SunPower project. Additionally, the key observation points should depict conditions at different times of the day and during different seasons.

In addition, we recommend that the assessment of the visual impacts on an expanded VSOI be conducted in full cooperation with the Carrizo Plains National Monument in order to consider common public usage patterns and to ensure that the Bureau of Land Management can incorporate the visual impacts into planning currently underway. This is important because of the need to address the cumulative impacts of the planned solar facilities and because the Carrizo Plains National Monument represents a significant visual resource.

The Carrizo Plains National Monument is currently undergoing a process for the preparation of a draft resource management plan that, according to Ms. Hurl, has not considered visual impacts from the planned solar projects because at the time the planning process began, proposals by the solar projects had not yet been made. Therefore, individual visual impacts on the Carrizo Plains National Monument resulting from the Project, and cumulative impacts from the three solar projects, have not been assessed.

²²³ AFC, p. 5.13-3.

²²⁴ AFC, Figure 5.13.1.

The PSA must be revised to include an analysis of whether the Project and cumulative visual impacts are consistent with LORS. The Bureau of Land Management has guidelines for assessing visual impacts, which, while referenced in the AFC, were not specifically addressed by the Applicant. In its guidelines, the BLM states:

It is BLM's [...] responsibility to identify and protect visual values on all BLM lands. The policy is described in BLM Manual Section 8400 - Visual Resource Management. BLM has reemphasized this policy in various other internal directives as well, including Information Bulletin No. 98-135 and Instruction Memorandum No. 98-164.²²⁵

Thus, we recommend that the Applicant and Staff contact BLM to ensure that individual and cumulative visual impacts on the Carrizo Plains National Monument are properly evaluated using BLM guidance.

VI. THE PSA MUST DESCRIBE INCONSISTENCIES WITH THE APPLICABLE ZONING ORDINANCE

Under the Warren-Alquist Act, the Energy Commission must determine whether a proposed project conflicts with any applicable land use plan, policy, or regulation of an agency that would normally have jurisdiction over the project.²²⁶ The PSA states that “the proposed project is consistent with...the San Luis Obispo General Plan and Land Use Ordinance as a conditionally permitted use...”²²⁷ However, as shown below, the Project’s proposed manufacturing in an agriculture zone is *not* a permitted use under the San Luis Obispo County Land Use Ordinance (“Land Use Ordinance”).

The Project proposes construction of a 40,000 square foot manufacturing building on the 380-acre construction laydown area, which is zoned for agriculture. The Land Use Ordinance allows electrical generation in an agricultural zone, subject to a conditional use permit.²²⁸ However, the Land Use Ordinance *prohibits* manufacturing buildings and manufacturing activities in an agricultural zone.

The Project proposes a 40,000 square foot manufacturing building to manufacture reflector frames.²²⁹ The building will have a 6-inch reinforced concrete foundation, insulated walls and roof, openings to receive truck deliveries of product and to move finished products out of the building, reflector frame production processes and fume extraction systems, and evaporative cooling and utility services,

²²⁵ <http://www.blm.gov/nstc/VRM/respon.html>

²²⁶ Pub. Resources Code, § 25523(d)(1).

²²⁷ PSA, p. 4.5-23.

²²⁸ Land Use Ordinance, Section 22.06.030.

²²⁹ Supplement to AFC, pp. 1-3-1-4.

among other components. The manufacturing process involves welding reflector frames and using polyurethane adhesives to affix mirrors to welded reflector components. The manufacturing process will produce zinc particulates, volatile organic compounds and hazardous air pollutants. The Project site is located approximately 1,400 feet from the Carrisa Plains Elementary School and 400 feet from the nearest resident.

The Land Use Ordinance prohibits manufacturing that includes welding and the use of adhesives in an agricultural zone. There are only two types of land uses that include welding. First, welding is included in the definition of “small-scale manufacturing” under the land use category “Industry, Manufacturing & Processing Uses.” Thus, the Project’s proposed manufacturing may be categorized as “small-scale manufacturing,” which is defined as follows:

[m]anufacturing establishments not classified in another major manufacturing group, including: jewelry, silverware and plated ware; musical instruments; toys; sporting and athletic goods; pens, pencils, and other office and artists’ materials; buttons; costume novelties; miscellaneous notions; brooms and brushes; caskets; and other miscellaneous manufacturing industries...also includes small-scale blacksmith and **welding** services when accessory to another use.²³⁰

Small-scale manufacturing use on land zoned for agriculture “is limited to establishments accessory or secondary to full-time farming or ranching operations on the same site, and which produce farm or ranch-related equipment, or small products sold off-site to supplement farm income.”²³¹ Since the Project’s proposed manufacturing is not accessory or secondary to full-time farming or ranching operations, the proposed manufacturing is not permitted.

Alternatively, welding in a manufacturing building is included in the “metal industries, fabricated” land use category, which is also not permitted in an agricultural zone. “Metal industries, fabricated” is defined as follows:

manufacturing establishments engaged in assembly of metal parts, including blacksmith and **welding** shops, sheet metal shops, machine shops and boiler shops, which produce metal duct work, tanks, towers, cabinets and enclosures, metal doors and gates, and similar products.²³²

However, the Land Use Ordinance does not permit fabricated metal industries in an agricultural zone.²³³

²³⁰ Land Use Ordinance, p. 8-64 (emphasis added).

²³¹ *Id.* at p. 4-117.

²³² *Id.* at p. 8-41 (emphasis added).

²³³ *Id.* at p. 2-14.

In sum, the Project's proposed manufacturing building is inconsistent with the Land Use Ordinance, and the PSA should be revised accordingly.

VII. THE PSA MUST PROVIDE FEASIBLE ALTERNATIVES THAT WOULD AVOID SIGNIFICANT EFFECTS OF THE PROJECT

CEQA requires the PSA to “describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives. . . .”²³⁴ Here, the PSA should include an analysis of alternatives to the permanent crossings of Carissa Creek.

As discussed above and incorporated herein, the proposed permanent crossings of the creek will significantly impact biological and water resources. However, the PSA fails to propose and analyze viable alternatives and feasible mitigation measures that would reduce or eliminate such impacts. For example, the Project could entirely eliminate all crossings of Carissa Creek. The Applicant has not provided any evidence that the crossings are necessary to obtain the basic objectives of the project. Alternatively, the Project could include temporary crossings that only span the creek, rather than allow filling the creek. A third option would be to allow permanent crossings that, again, only span the creek, rather than allow filling. The Applicant has not provided any evidence showing that permanent crossings or fill are necessary to fulfill the Project's basic objectives. Accordingly, the PSA must be revised to include a thorough description of alternatives that eliminate the need for permanent crossings of Carissa Creek, and therefore decrease the severity of project-related impacts on biological and water resources.

VIII. THE PSA MUST INCORPORATE EFFECTIVE MEASURES TO MITIGATE ENVIRONMENTAL IMPACTS TO LESS THAN SIGNIFICANT

A. The PSA Must Describe Effective Mitigation Measures for Each Significant Environmental Impact

An EIR, or EIR equivalent, must propose and describe mitigation measures sufficient to minimize the significant adverse environmental impacts identified in the EIR.²³⁵ Also, mitigation measures must be designed to minimize, reduce, or avoid an identified environmental impact or to rectify or compensate for that

²³⁴ CEQA Guidelines, § 15126.6(a).

²³⁵ Pub. Resources Code, §§ 21002.1(a), 21100(b)(3).

impact.²³⁶ Where several mitigation measures are available to mitigate an impact, each should be discussed and the basis for selecting a particular measure should be identified.²³⁷

A public agency may not rely on mitigation measures of uncertain efficacy or feasibility.²³⁸ “Feasible” means capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors.²³⁹ Moreover, mitigation measures must be fully enforceable through permit conditions, agreements, or other legally binding instruments.²⁴⁰ Finally, CEQA does not allow deferring the formulation of mitigation measures to post-approval studies;²⁴¹ nor does CEQA permit the delegation of mitigation of significant impacts to responsible agencies.²⁴²

As shown below, the PSA lacks effective, feasible mitigation for numerous impacts it identifies as significant. By deferring the development of specific mitigation measures, the PSA has effectively precluded public input into the effectiveness and/or the development of those measures. Thus, additional mitigation measures must be included in a revised PSA that is circulated for public review and comment.

1. Mitigation Measures for Air Quality Impacts Are Inadequate

The PSA concludes that the Project PM10 emission impacts are significant.²⁴³ In addition, the PSA concludes that the Project will result in significant impacts to ozone air quality standards.²⁴⁴ However, the PSA improperly defers the development of plans to mitigate these impacts into the future, without specifying any performance measures. For example, condition of certification AQ-SC2 requires the Applicant to submit an air quality construction mitigation plan, which details the steps that will be taken to ensure compliance with conditions of certification AQ-SC3 through AQ-SC6, no later than 60 days prior to ground disturbance.²⁴⁵ In addition, condition of certification AQ-SC7 requires the Applicant to provide a site dust control plan, which describes the wind erosion control techniques that will be

²³⁶ CEQA Guidelines, § 15370.

²³⁷ CEQA Guidelines, § 15126.4(a)(2).

²³⁸ *Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692, 727 (finding groundwater purchase agreement inadequate mitigation measure because no record evidence existed that replacement water was available).

²³⁹ CEQA Guidelines, § 15364.

²⁴⁰ CEQA Guidelines, § 15126.4(a)(2).

²⁴¹ CEQA Guidelines, § 15126.4(a)(1)(B); *Sundstrom v. County of Mendocino* (1988) 202 Cal.App.3d 296, 308-309.

²⁴² *City of Marina v. Board of Trustees of the California State University*, (2006) 39 Cal.4th 341, 366.

²⁴³ PSA, p. 4.1-12.

²⁴⁴ *Id.* at p. 4.1-14.

²⁴⁵ *Id.* at p. 4.1-17.

used, no later than 60 days prior to start of commercial operation.²⁴⁶ However, without the mitigation plans, the public, other agencies, the parties, and the decisionmakers cannot determine whether air pollutant emission impacts will be minimized to a less than significant level. Therefore, the air quality construction mitigation plan and the site dust control plan must be completed now, prior to Project approval, and be included in a revised PSA that is circulated for public review and comment.

Further, several of the mitigation measures required by the PSA are worded ambiguously, which renders them unenforceable as a practical matter. For example, condition of certification AQ-SC3(H), designed to prevent fugitive dust from leaving the Project site, states that “[c]onstruction areas adjacent to any paved roadway shall be provided with sandbags *or other measures as specified in the Storm Water Pollution Prevention Plan (SWPPP)*...”²⁴⁷ However, the SWPPP has not yet been developed.²⁴⁸ Thus, the proposed mitigation is uncertain and vague. The public, other agencies, the parties, and the decisionmakers cannot determine whether fugitive dust plumes will be prevented from leaving the Project site.

In addition, AQ-SC5(F) states that diesel heavy construction equipment shall not idle for more than five minutes “*to the extent practical*.”²⁴⁹ This measure is vague and uncertain. There is no indication that the measure will in fact minimize emission impacts to a less than significant level. The PSA must therefore be revised to include specific, enforceable mitigation measures.

Finally, there are additional relevant and widely employed feasible mitigation measures contained in the CEQA guidelines and rules of air districts and other agencies that should be required to satisfy the Applicant’s obligation to employ feasible mitigation necessary to reduce the Project’s adverse impacts on air quality during construction. The following measures should be included in a revised PSA as conditions of certification:

- Install diesel oxidation catalysts or catalyzed diesel particulate filters;²⁵⁰
- Electrify equipment where feasible;²⁵¹

²⁴⁶ *Id.* at p. 4.1-21.

²⁴⁷ *Id.* at p. 4.1-18 (emphasis added).

²⁴⁸ *Id.* at p. 4.9-36.

²⁴⁹ *Id.* at p. 4.1-21 (emphasis added).

²⁵⁰ San Luis Obispo County Air Pollution Control District, CEQA Air Quality Handbook, April 2003.

²⁵¹ *Id.*

- Schedule construction truck trips during non-peak hours to reduce peak hour emissions;²⁵²
- Use alternatively fueled construction equipment on site where feasible, such as compressed natural gas, liquefied natural gas, propane, or biodiesel;²⁵³
- Curtail construction during periods of high ambient pollutant concentrations; this may include ceasing of construction activity during the peak hour of vehicular traffic on adjacent roadways;²⁵⁴
- The engine size of construction equipment shall be the minimum practical size;²⁵⁵ and
- The project shall demonstrate that the heavy-duty (>50 horsepower) off-road vehicles to be used during construction, including owned, leased and subcontractor vehicles, will achieve a project wide fleet average 20% NOx reduction and 45% particulate reduction compared to the most recent CARB fleet average at time of construction.²⁵⁶

Therefore, we urge Staff to incorporate the air quality construction mitigation plan and the site dust control plan, to clarify mitigation, and to add feasible mitigation in a revised PSA that is circulated for public review and comment.

2. Mitigation Measures for Impacts to Biological Resources Are Inadequate

We agree with Staff that “[c]learing of the project site and construction of the power plant would result in significant impacts to special-status wildlife and plants that must be mitigated.”²⁵⁷ However, the PSA improperly defers the development of plans to mitigate these impacts into the future. The following conditions of certification are examples of improper deferral of mitigation that deprive the public of the ability to review and submit comments on impacts:

²⁵² *Id.*

²⁵³ *Id.*

²⁵⁴ San Joaquin Valley Unified Air Pollution Control District, Guide for Assessing and Mitigating Air Quality Impacts, Revised June 1, 1999.

²⁵⁵ Santa Barbara County Air Pollution Control District, Scope and Content of Air Quality Sections in Environmental Documents, September 1997.

²⁵⁶ Sacramento Metropolitan Air Quality Management District, Construction Emissions Mitigation; <http://www.airquality.org/ceqa/index.shtml#construction>.

²⁵⁷ PSA, p. 4.2-23.

- Bio-6 requires the Applicant to submit a biological resources mitigation implementation and monitoring plan at least 60 days prior to any ground disturbance activities.²⁵⁸
- Bio-11 requires a survey for rare plants on the Project site in the spring of 2009, and if rare plants are found and cannot be avoided, the Applicant must develop a mitigation plan.²⁵⁹
- Bio-17 requires the Applicant to provide a management plan for the habitat compensation lands within six months of the land purchase.²⁶⁰
- Bio-18 requires the Applicant to work with CDFG, USFWS, San Luis Obispo County, and the Energy Commission Staff to create a wildlife corridor mitigation plan, which will be submitted at least 120 days prior to any ground disturbance activities.²⁶¹

These plans must be developed now, prior to Project approval, and be included in a revised PSA that is circulated for public review and comment.

In addition, the PSA defers identification and analysis of several other mitigation measures as follows:

- The PSA states that the Applicant’s proposed mitigation measures for impacts to species that would be affected by the Project, including the purchase of a 705-acre agricultural easement, modification of fencing along State Route 58, maintaining a watering facility on the southeast corner of the laydown area, and additional watering facilities, ***will be evaluated during the wildlife corridor modeling process.*** Further, the PSA states that ***additional mitigation is likely to be necessary.*** According to the PSA, mitigation ***may*** require conservation and enhancement of remaining undeveloped lands within the corridor, replacement of fencing to allow passage of pronghorn, “the construction of special fence crossings, and additional signage ***or other signage or other measures yet to be developed.***”²⁶²
- The PSA states that compensation lands for mitigation of impacts to biological resources from loss of habitat ***have not yet been identified,*** and the implementation of ***additional mitigation measures*** in combination with habitat compensation ***may be required.*** Further,

²⁵⁸ *Id.* at p. 4.2-29.

²⁵⁹ *Id.* at pp. 4.2-32-33.

²⁶⁰ *Id.* at p. 4.2-35.

²⁶¹ *Id.* at pp. 4.2-35-36.

²⁶² PSA, p. 4.2-14.

according to the PSA, the Project *may* require a regional perspective for implementation of mitigation measures.²⁶³

- The PSA states that the “Final Staff Assessment will include appropriate mitigation measures to ensure that all impacts to biological resources from development of the CESF are fully mitigated.”²⁶⁴

Identification and analysis of mitigation measures to reduce impacts to biological resources to a less than significant level must occur now, and be included in a revised PSA, so that the public has an opportunity to evaluate and comment on the proposed mitigation. As proposed, Project impacts remain significant and unmitigated.

Finally, several of the mitigation measures required by the PSA are worded ambiguously, which renders them unenforceable as a practical matter. For example, condition of certification Bio-8(8) requires the Applicant to “*minimize* use of rodenticides and herbicides in the project area.”²⁶⁵ This measure is vague and uncertain. There is no indication that the measure will in fact reduce impacts to biological resources to a less than significant level. The PSA must therefore be revised to include specific, enforceable mitigation measures.

We offer the following comments for development of effective mitigation measures for impacts to wildlife:

a. Mitigation Measures for Impacts to San Joaquin Kit Fox Are Inadequate

We commend Staff for its analysis of the San Joaquin kit fox and agree with Staff’s conclusion that the Project site provides suitable habitat for the San Joaquin kit fox and that the Project poses potentially significant impacts to the species.²⁶⁶ However, we remain concerned by the Applicant’s standing, yet unsubstantiated, argument that the Project site provides merely marginal kit fox habitat.²⁶⁷

Substantial evidence shows that the Project site provides habitat for the kit fox that is far superior than the Applicant acknowledges, and therefore mitigation measures must take into account the proper habitat value. The Applicant is mistaken in its claim that the Project site is merely “pass through habitat kit fox.”

²⁶³ *Id.* at p. 4.2-16.

²⁶⁴ *Id.* at p. 4.2-21.

²⁶⁵ PSA, p. 4.2-31.

²⁶⁶ PSA, p.

²⁶⁷ Applicant’s Comments on Preliminary Staff Assessment, p. 8.

²⁶⁸ The Applicant detected kit foxes during the 2007 and 2008 surveys, indicating that the Project site is utilized by kit fox.

Furthermore, the Applicant's statement that the Project site merely provides "marginal foraging habitat"²⁶⁹ is incorrect. The Recovery Plan for Upland Species of the San Joaquin Valley ("Upland Recovery Plan") states that the diet of kit foxes varies geographically, seasonally, and annually, based on variation in abundance of potential prey.²⁷⁰ In the southern portion of their range, which includes the Project region, kangaroo rats, pocket mice, white-footed mice, and other nocturnal rodents comprise about one-third or more of the kit fox diet. Kit foxes in the southern range also prey on California ground squirrels, black-tailed hares, San Joaquin antelope squirrels, desert cottontails, ground-nesting birds, and insects.²⁷¹ Vegetation is also consumed, with grass being the most commonly ingested plant material.²⁷² Based on the Applicant's small mammal data, which includes 44 total individuals composed of 14 California pocket mice, 2 deer mice, 27 McKittrick pocket mice, and 1 desert cottontail, and the 16,300 grasshoppers detected, the foraging habitat for kit fox is certainly better than marginal.

In addition, the Applicant is incorrect in its assumption that the presence of American badger territory on the Project site would preclude kit fox dens from being established on-site.²⁷³ One study found that 64% of the dens used by radio-collared kit foxes exhibited no sign of kit foxes.²⁷⁴ Therefore, evidence that a den is in use may be difficult to obtain without specialized techniques (e.g., cameras). The Applicant did not implement any specialized techniques, and did not present any scientific data to justify the conclusion that no kit fox dens were present on the Project site. Further, the upland recovery plan states that "foxes also modify and use dens constructed by other animals, such as ground squirrels, badgers, and coyotes, and human-made structures (culverts, abandoned pipelines, and banks in sumps or roadbeds)."²⁷⁵ Consequently, the presence of badgers on-site may enhance the incidence of kit fox, not preclude their occurrence.

²⁶⁸ 2008 Biological Surveys Report, p. 9.

²⁶⁹ *Id.*

²⁷⁰ U.S. Fish and Wildlife Service. 1998. Recovery plan for upland species of the San Joaquin Valley, California, Region 1, Portland, OR. 319 pp.

²⁷¹ Scrivner, J.H., O'Farrell, T.T. Kato, and M.K. Johnson. 1987. Diet of the San Joaquin kit fox, *Vulpes macrotis mutica*, on Naval Petroleum Reserve #1, Kern County, California, 1980-1984. Rep. No. EGG 10282-2168, EG&G Energy Measurements, Goleta, CA, 26 pp.

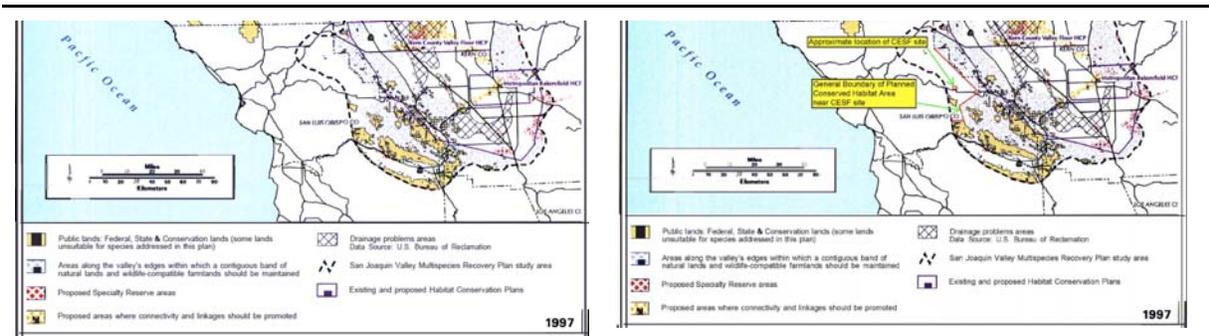
²⁷² Morrell, S.H. 1971. Life history of the San Joaquin kit fox. California Dept. Fish and Game, Sacramento, Spec. Wildl. Invest., Unpubl. Rep., 25 pp.

²⁷³ 2008 Biological Surveys Report, p. 9.

²⁷⁴ Reese, E.A., T.T. Kato, W.H. Berry, and T.P. O'Farrell. 1992. Ground penetrating radar and thermal images applied to San Joaquin kit fox (*Vulpes macrotis mutica*) at Camp Roberts Army National Guard Training Site, CA. U.S. Dept. of Energy Topical Report, No. EGG 10617-2162, EG&G/EM Santa Barbara Operations, National Technical Service, Springfield, VA.

²⁷⁵ U.S. Fish and Wildlife Service. 1998. Recovery plan for upland species of the San Joaquin Valley, California, Region 1, Portland, OR. 319 pp.

Importantly, Staff should be aware that the Upland Recovery Plan uses stippled gray to depict those areas along the valley's edge within which a contiguous band of natural lands and wildlife-compatible farmlands should be maintained (see figure below).²⁷⁶ Figure 3 of the Applicant's 2008 Biological Surveys Report is nearly identical and is presumably intended to depict the same areas (see below). However, the figure contained in the Applicant's survey report has a red boundary line added to depict "the general boundary of planned conserved habitat area near CESF site." This red line could easily be interpreted as a recovery plan boundary, with the Project site outside some "conserved habitat area." We advise Staff that the original figure in the Upland Recovery Plan does not contain the boundary line depicted by the Applicant. In fact, there is no such boundary or area discussed in the Upland Recovery Plan. Instead, the Project area is completely within the recovery planning area.



Original figure from Recovery Plan

Applicant's figure (note addition of red line)

Finally, we agree with Staff's kit fox habitat evaluation. The discrepancy between the score calculated by the Applicant with that calculated by Staff and the CDFG suggests biased scoring. We have reviewed the score sheets, and conclude that the Applicant is the source of bias. Specifically, we made the following simple observations:

The Applicant's score sheet indicated that "transient" individuals were detected. However, the Applicant's response to question number three indicates that the Project area is completely isolated by row crops or development (thus, a score of zero). If the site was truly isolated, it would have characteristics similar to an island, and a species' persistence on that island would be dependent on the ability of the island to provide the species with the resources it needs. Kit fox were detected on the Project site during 2007 and 2008, indicating at least some level of persistence (or population viability). For kit fox to persist in isolation, habitat

²⁷⁶ U.S. Fish and Wildlife Service. 1998. Recovery plan for upland species of the San Joaquin Valley, California, Region 1, Portland, OR. 319 pp, Fig. 73.

quality would have to be much higher than 50, and could not be of the poor quality suggested by the Applicant. In addition, mortality of a population confined to an island, as suggested, would be known, indicating that the Applicant's answer to question number 4 is incorrect, and the importance of the island to the recovery of the species might be great, indicating an incorrect answer to question number one. Moreover, given that kit fox were detected in 2007 and 2008, and assuming the site is not functioning as an island, individuals must be entering the site, indicating that the Applicant's answer to question number 3 is incorrect.

In addition, the Applicant's responses to questions two and five greatly conflict. In particular, there is no explanation for how the site could contain no kit fox habitat characteristics (i.e., score of zero for question number two), yet result in the site no longer supporting foxes (i.e., response to question number five).

Clearly, the Applicant refuses to acknowledge the actual habitat value of the Project site for the kit fox. The literature and surveys show that the Project site provides habitat for the kit fox that has a value greater than "marginal." Thus, we urge Staff to consider the above discussion when crafting mitigation measures to avoid or reduce impacts to the kit fox.

b. Compensatory Habitat Mitigation Is Insufficient

Mitigation measures should be designed to offset or reduce the Project's significant impacts on biological resources. Although there is inherent conservation in an easement, establishing one does not offset habitat loss. Moreover, as currently proposed by the Applicant, the 1,020 acres of habitat that will be lost from Project construction and operation will be compensated with a 705-acre easement. This does not add up.

The Project must mitigate for adverse impacts to the San Joaquin kit fox via compensatory habitat. Any need to provide compensatory habitat for other species should be viewed in isolation. In other words, habitat provided for kit fox compensation cannot automatically be assumed to compensate for impacts to other species, even if the habitat of both the Project site and the compensation site are perceived to be the same.

Habitat, per se, only provides part of the explanation of the distribution and abundance of a species. Demographic stochasticity and the limiting effect of localized dispersal generally prevent an explanation of much more than half of the variation in territory occupancy as a function of habitat quality. As a result, the key focus of habitat evaluation should be the determination of limiting agents in species abundance. Habitat by itself does not guarantee long-term fitness of

individuals and viability of populations.²⁷⁷ Thus, habitat factors for all target species must be assessed before effective mitigation can be developed.

c. Mitigation Measures for Significant Impacts to Wildlife Corridors Are Unknown

The importance of corridors to the conservation of special-status species may be most important to the large mammals that occur on the Project site and in the region, including pronghorn antelope and tule elk. These mammals must be able to move freely within their home ranges to escape predators, feed, obtain water, and reproduce (rutting and fawning or calving). Further, pronghorns may migrate between summer and winter ranges and can move up to 150 km (93 miles) between ranges in California.²⁷⁸ Home ranges of cow-calf elk herds in Humboldt County averaged 2.9 km² (1.1 miles²) and in the Rocky Mountains home ranges up to 50 km² (20 miles²) were reported.²⁷⁹ For tule elk in particular, an important consideration in corridor design is the distance between open water sources, which should be no greater than 3.2 km (2 miles).²⁸⁰

Wildlife corridors are the primary means to connect isolated populations. Staff demonstrated the importance of this through discussion of the significance of the Project area in providing suitable habitat between the core Carrizo Plain kit fox population in the Carrizo Plain National Monument to the south and the Salinas-Pajaro population to the northwest and western Kern populations to the east.²⁸¹ Protecting naturally-existing corridors promotes ecological processes and benefits regional and local biological diversity.

The creation of linear patches intended to function as corridors as a tool to allow for further habitat removal may ultimately cause the local extirpation of species, and thus erode biological diversity. Because of these concerns, it is important to evaluate critically both the effectiveness of biological corridors and the tradeoff with diminished habitat area that often accompanies habitat conservation plans. The corridor modeling study that Staff is facilitating should identify and provide Project management options regarding the size and location of the best areas for corridors.

Our greatest concern involving corridors and adequate allowance for them comes from the cumulative impacts on north-south wildlife movement in the valley.

²⁷⁷ Morrison M.L., B.G. Marcot, and R.W. Mannan. 2006 *Wildlife-Habitat Relationships: Concepts and Applications*. 3rd ed. Washington (DC): Island Press.

²⁷⁸ California Wildlife Habitat Relationships System. 2005. California Department of Fish and Game. California Interagency Wildlife Task Group. CWHR version 8.1 personal computer program. Sacramento (CA).

²⁷⁹ *Id.*

²⁸⁰ *Id.*

²⁸¹ PSA, p. 4.2-11.

The Arco Solar facility directly east of the Project site has been dismantled, but the PG&E property it occupied remains fenced, excluding wildlife. In addition, as Staff is aware, the three proposed solar projects in the area, including the Project, OptiSolar's Topaz Solar Farm, and the SunPower project, will comprise 15 square miles. Development of these projects within a 15-mile wide valley floor may essentially block all available area for wildlife, especially large mammals, to move freely north and south of the Project area. Inadequate wildlife corridors could easily lead to unacceptable local extinctions of kit fox, pronghorn, and tule elk, if the cumulative impacts from these projects are not effectively mitigated.

d. Significant Noise Impacts on Wildlife Are Unmitigated

The PSA concludes that, with mitigation, construction noise will not result in significant impacts to biological resources.²⁸² Proposed mitigation involves preconstruction surveys for nesting birds.²⁸³ However, locating bird nests can be extremely difficult due to the tendency of many species to construct well-concealed or camouflaged nests.

Most studies that involve locating bird nests employ a variety of techniques – beyond simply searching for nests. These further feasible mitigation measures include efforts focused on observing bird behavior. Often, the results of these observations are sufficient to infer nesting, or not, without having to locate the actual nest. For example, a bird carrying food or nesting material can be a strong cue that a nest is located nearby or under construction.

Any nest searching must be performed by a qualified biologist, because some techniques have the potential to reduce nest success if not conducted appropriately.²⁸⁴ Specifically, studies indicate that humans can alert predators to a nest's location, or cause disturbance that result in nest abandonment.²⁸⁵

For these reasons, the PSA should provide information on the specific methods that will be used to conduct the pre-construction nesting bird surveys. For example, the PSA should clarify whether additional survey effort should be devoted to instances in which nesting cues (e.g., carrying food, territorial behavior) are observed, but a nest cannot be located. Also, the PSA should describe how well-concealed or camouflaged nests will be located and not adversely affected by Project activities. In addition, the PSA should discuss the methods that will be used to minimize surveyor-induced predation, nest disturbance, and abandonment. This

²⁸² *Id.* at p. 4.2-18.

²⁸³ *Id.* at p. 4.2-31.

²⁸⁴ Gotmark F. 1992. The effects of investigator disturbance on nesting birds. *Current Ornithology* 9: 63-104.

²⁸⁵ Martin T.E., and G.R. Geupel. 1993. Nest-Monitoring Plots: Methods for Locating Nests and Monitoring Success. *J. Field Ornithol.* 64(4):507-519.

information is crucial to evaluating whether the proposed mitigation will reduce noise impacts to a less than significant level. Because the PSA fails to include this information, the proposed mitigation is uncertain, and impacts to biological resources from Project noise remain significant.

3. Significant Noise Impacts on the Community Remain Unmitigated

The PSA concludes that the Project would result in significant adverse noise impacts during both operation and construction.²⁸⁶ However, rather than include specific, enforceable mitigation measures to reduce noise impacts to a less than significant level, the PSA requires the Applicant to prepare a draft noise mitigation plan that Staff will evaluate before reaching conclusions in the Final Staff Assessment.²⁸⁷

This approach does not satisfy CEQA. Rather, the Applicant must provide Staff with all necessary information to perform an adequate analysis of noise impacts. Subsequently, Staff must include its impact analysis, along with specific, enforceable mitigation measures to reduce impacts to a less than significant level, in a revised PSA that is circulated for public review and comment.

4. Mitigation Measures for Impacts to Water Resources Are Inadequate

The PSA concludes that “[t]he CESF project site will be subject to wind and water erosion during construction and operation.”²⁸⁸ In addition, the PSA states that, “there is the potential for hazardous chemicals to be released from construction equipment or materials storage areas.”²⁸⁹ Thus, the PSA concludes that the Applicant will provide details related to hazardous materials storage areas and construction vehicle fueling and maintenance areas in the Construction SWPPP.²⁹⁰ Specifically, the PSA defers development of the following mitigation measures:

- Soil & Water-1 requires the Applicant to develop and implement a construction stormwater pollution prevention plan prior to site mobilization.²⁹¹

²⁸⁶ PSA, p. 4.6-1.

²⁸⁷ *Id.*

²⁸⁸ *Id.* at p. 4.9-15.

²⁸⁹ *Id.* at p. 4.9-17.

²⁹⁰ *Id.* at p. 4.9-17.

²⁹¹ *Id.* at p. 4.9-36.

- Soil & Water-2 requires the Applicant to submit a drainage report and sedimentation and erosion control plan no later than 90 days prior to site mobilization.²⁹²

Instead, the PSA should include specific measures to reduce the significant impacts identified by Staff. The SWPPP and DESCP should be prepared now and included in a revised PSA that is circulated for public review and comment. Only by doing so will the public be afforded its right under CEQA to review and comment on proposed mitigation measures for the Project.

5. Mitigation Measures for Significant Traffic Impacts Are Inadequate

The PSA concludes that “[t]raffic generated during construction...would result in substantial delays to vehicle traffic along State Route 58 (SR-58), resulting in a significant, adverse direct and cumulative impact. To reduce the extent of this significant impact...Staff has proposed Condition of Certification **TRANS-1**.”²⁹³ Trans-1 requires the Applicant to prepare a traffic control and implementation plan at least 90 days prior to the start of construction.²⁹⁴ However, condition of certification Trans-1 is deferred to a future date, and therefore deprives the public with the opportunity to review and comment on the measure, as required by CEQA. Rather, a traffic control and implementation plan must be prepared now, prior to Project approval, and circulated for public comment.

6. Mitigation Measures Are Improperly Deferred

The PSA defers identification of each of the above-listed mitigation measures until after certification of the Project. However, before it approves the Project, the Commission is required by CEQA to make findings. Specifically, the Commission must find that either: (1) changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen each identified significant impact; (2) such changes or alterations are within the jurisdiction of another public agency and such changes have been adopted by such other agency or can and should be adopted by such other agency; or (3) specific economic, legal, social, technological, or other considerations make infeasible identified mitigation measures or project alternatives. These findings must be based on substantial evidence.²⁹⁵ Therefore, until these mitigation measures are specifically identified and evaluated, the Energy Commission will not know if the mitigation will reduce all impacts to a less than significant level. The Commission will also not know if it

²⁹² *Id.* at p. 4.9-38.

²⁹³ PSA, p. 4.10-1.

²⁹⁴ *Id.* at pp. 4.10-22-23.

²⁹⁵ Pub. Resources Code, § 21081; CEQA Guidelines, § 15091(a).

must consider making findings of overriding considerations.²⁹⁶ Thus, to comply with CEQA, the PSA must be revised to include specific mitigation measures.

IX. CONCLUSION

We commend Staff for its efforts in identifying many potentially significant impacts posed by the Project, as well as proposing important and necessary mitigation measures for those impacts. However, as it stands, the PSA does not satisfy the requirements of CEQA or the Warren-Alquist Act, and impacts remain significant and unmitigated. Accordingly, an adequate, revised PSA must be prepared and circulated for public review and comment.

Sincerely,

/s/

Tanya A. Gulesserian
Rachael E. Koss

REK:TAG:bh

²⁹⁶ CEQA Guidelines, § 15093.

STATE OF CALIFORNIA
Energy Resources Conservation
and Development Commission

In the Matter of:

The Application for Certification for the
Carrizo Energy Solar Farm by Carrizo
Energy, LLC

Docket No. 07-AFC-8

PROOF OF SERVICE

I, Bonnie Heeley, declare that on January 15, 2009, transmission via electronic mail of the attached **CALIFORNIA UNIONS FOR RELIABLE ENERGY COMMENTS ON THE PRELIMINARY STAFF ASSESSMENT** was consistent with the requirements of California Code of Regulations, title 20, sections 1209, 1209.6, and 1210. All electronic copies sent to all those identified on the Proof of Service listed below.

Via U.S. Mail to:
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I declare under penalty of perjury that the foregoing is true and correct. Executed at South San Francisco, California, on January 15, 2009.

_____/s/_____
Bonnie Heeley